

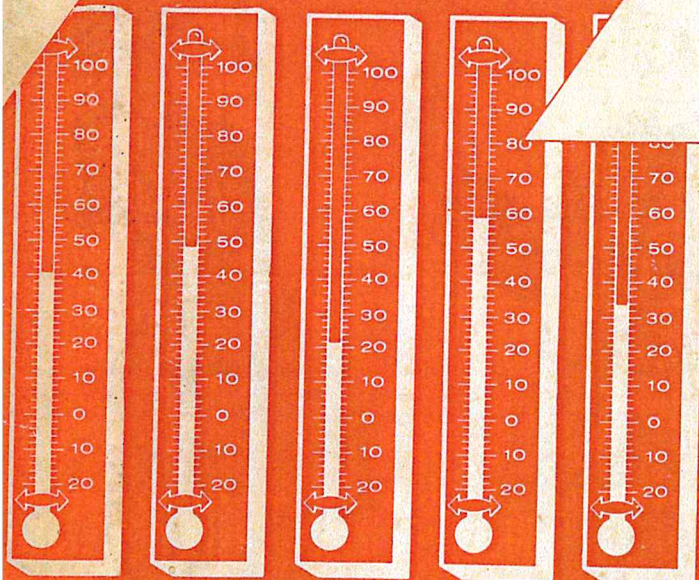
THE NEW ARITHMETIC

$$\begin{array}{r} 45 \\ 30 = 10 \times 3 \\ 15 \\ 15 = 5 \times 3 \\ 0 \end{array}$$

$$\begin{array}{r} 2 \overline{)85} \\ 80 \\ 5 \\ 4 \quad 2 \times 2 \\ 1 \text{ remainder} \end{array}$$

$$\begin{array}{l} 85 \div 5 = \underline{\hspace{1cm}} \\ 52 \div 4 = \underline{\hspace{1cm}} \\ 84 \div 6 = \underline{\hspace{1cm}} \\ 57 \div 3 = \underline{\hspace{1cm}} \\ 72 \div 4 = \underline{\hspace{1cm}} \\ 88 \div 8 = \underline{\hspace{1cm}} \\ 98 \div 7 = \underline{\hspace{1cm}} \\ 96 \div 8 = \underline{\hspace{1cm}} \\ 55 \div 5 = \underline{\hspace{1cm}} \\ 91 \div 7 = \underline{\hspace{1cm}} \\ 66 \div 6 = \underline{\hspace{1cm}} \\ 65 \div 5 = \underline{\hspace{1cm}} \\ 75 \div 5 = \underline{\hspace{1cm}} \\ 72 \div 6 = \underline{\hspace{1cm}} \\ 96 \div 6 = \underline{\hspace{1cm}} \end{array}$$

said 3004 books were checked from the library in the month of July and 5129 in August. How many books were checked from the library in the two months?

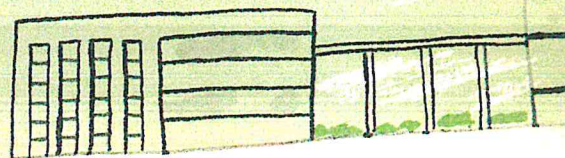
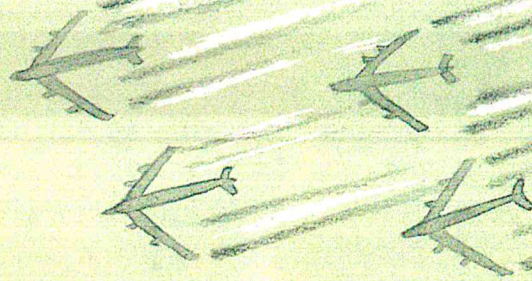


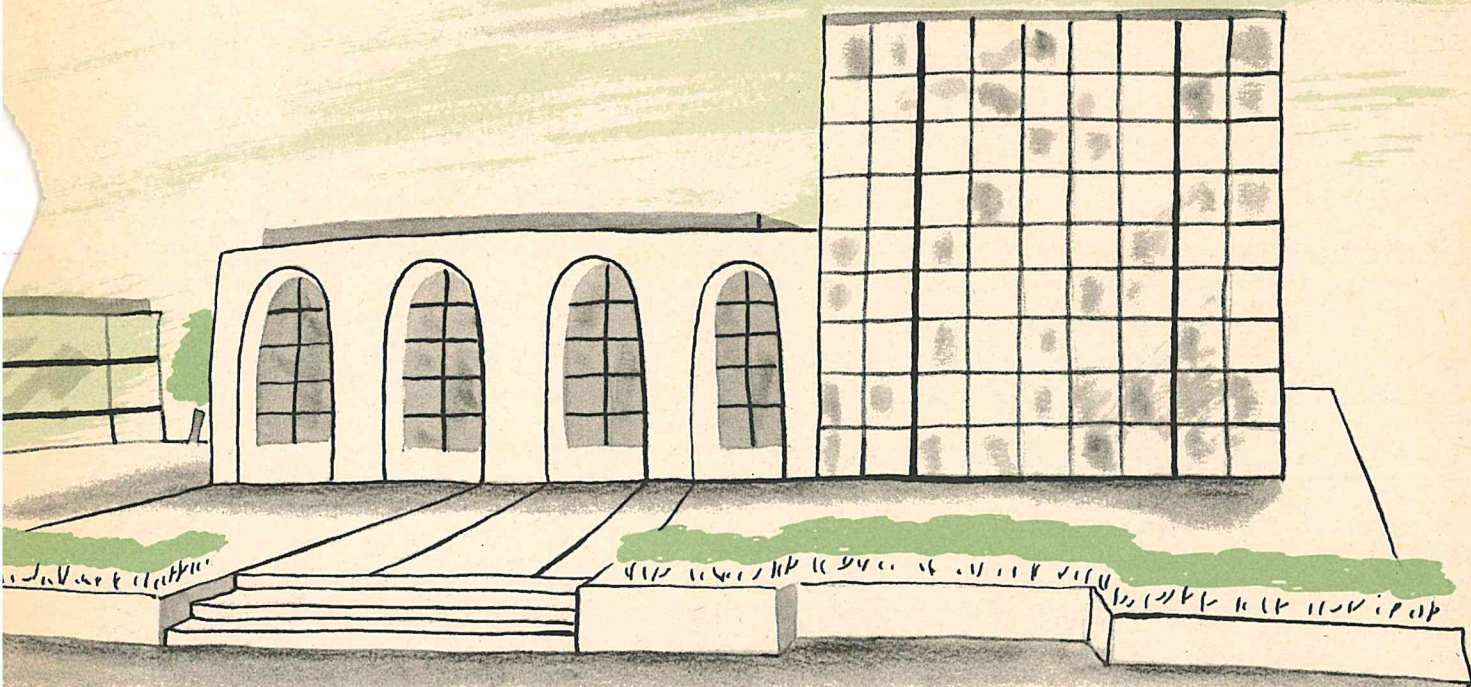
McCORMICK-MATHERS



\$8.33	\$5.17	\$6.51
5.97	3.50	4.65
\$5.13	\$3.41	\$1.75
.30	.98	.96







THE NEW ARITHMETIC

4

Rose and Ruth Weber
assisted by
Flora B. Miller and Edith H. Price



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Wichita, Kansas

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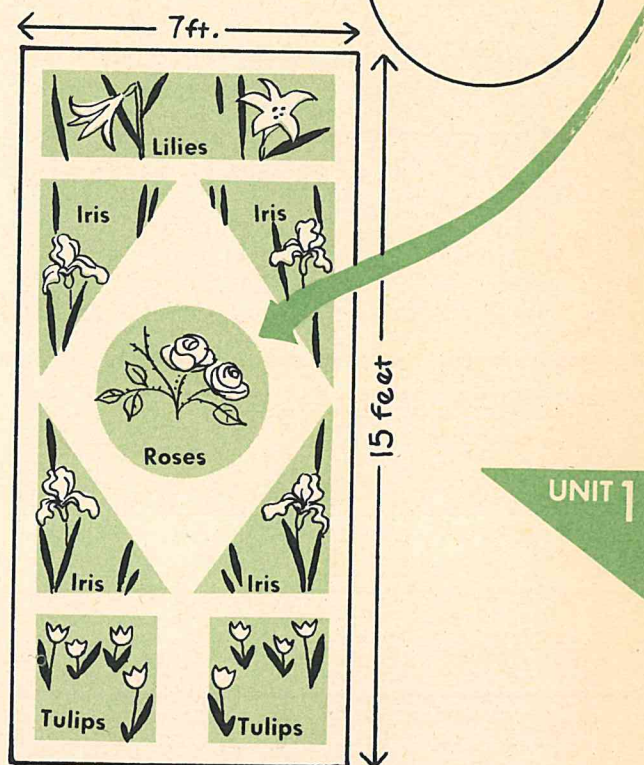
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Illustrated by Hertha Depper

Lesson 1 — USING GEOMETRIC SHAPES

The picture shows the plan of Jane's flower garden. The garden has 4 straight sides and 4 **square corners**. A square corner is also called a **right angle**. The shape of the garden is a **rectangle**. Any two of the sides of a rectangle that come together in a right angle can be called the width and the length. Usually the longer side is the length, and the shorter side is the width. The width of Jane's garden is 7 feet. The length of it is 15 feet.

Tom helped Jane make a circle for her rose bed. He drove a stake in the center of the garden and tied a short rope to it. He tied a pointed stick to the other end of the rope. Pulling the rope tight, he drew a circle on the ground with the pointed stick.



UNIT 1

1. The lily bed has ____ straight sides and ____ square corners. The lily bed is shaped like a _____. Write the name of something in your room shaped like a rectangle. _____
2. A rectangle that has four equal sides is called a **square**. Measure the sides of the plan of the tulip beds in the picture. Each tulip bed is in the shape of a _____. Write the name of something in your room which has the same shape as the tulip beds. _____
3. A **triangle** has 3 sides and 3 corners. How many flower beds shaped like triangles are in the picture? ____ Each iris bed is in the shape of a _____. Write the name of something in your room which is shaped like a triangle: _____
4. The rose bed in the picture has the shape of a **circle**. Write the name of something in your room which also has the shape of a circle: _____

TOP SCORE: 10 MY SCORE: _____

Lesson 2 — MORE GEOMETRIC SHAPES

The boys and girls made drawings of the geometric shapes they had seen when they went to the park.

Jerry drew an **oval** like the tracks on which the little train runs.

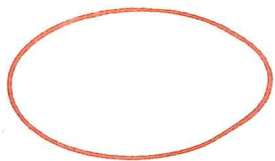
Bob drew a **circle** like the path where the children ride the ponies.

Jane drew a **square** like the shape of the park. Then she drew a diagonal path across the square. Do you see the two right triangles (that have one right angle) that are made by the diagonal path? Each of the triangles has two sides that are the same length.

Mary drew a **rectangle** like the lot that she crossed to go to the park. Remember that a rectangle has two sides that are longer than the other two. Then Mary drew the diagonal path that crosses the lot. This made two right triangles. These triangles are different from those made by the path across the square park. Each side of these triangles is a different length.

John drew a **triangle** like the park flower bed. The three sides of the triangle are equal. Notice that no angle is a right angle.

Draw a line connecting each drawing with its name:



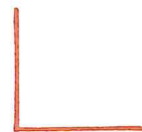
rectangle



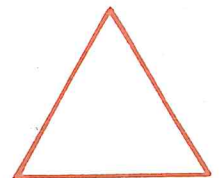
triangle



right angle

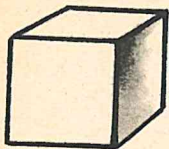


oval

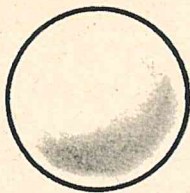


circle

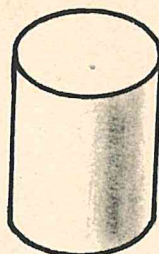
Lesson 3 — OTHER GEOMETRIC SHAPES



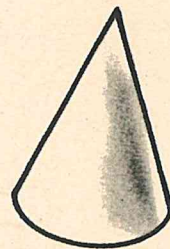
Cube



Sphere

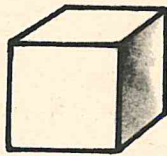
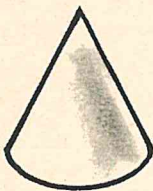


Cylinder



Cone

1. Write the name of each of these figures:



UNIT 1

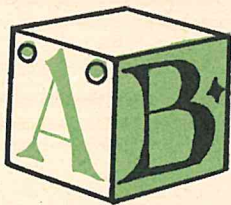
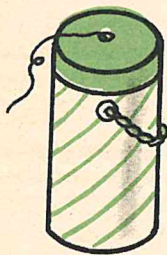
a _____ b _____ c _____ d _____

2. Write the name of something that is shaped like:

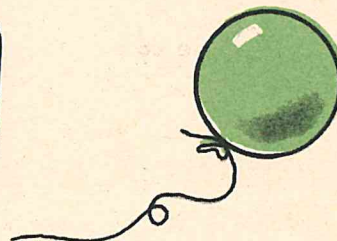
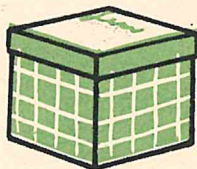
a a cone _____ b a cube _____

c a sphere _____ d a cylinder _____

3. Write the names of the shapes of these objects:

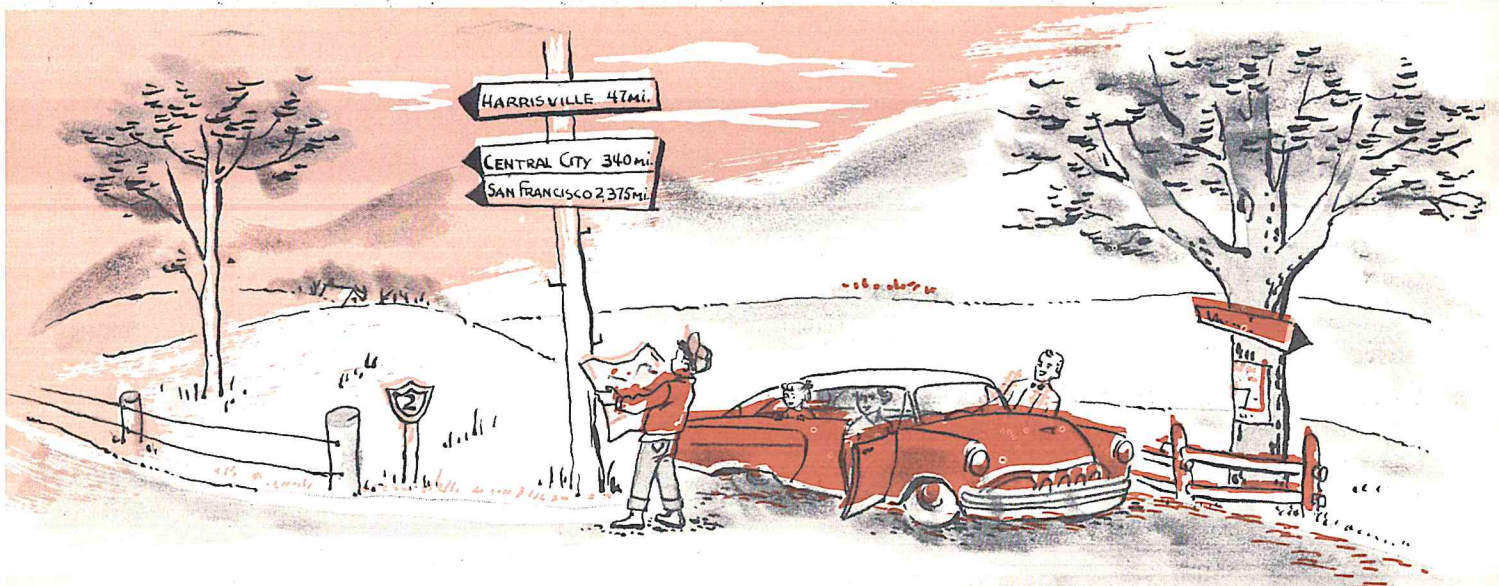


a _____ b _____ c _____ d _____



e _____ f _____ g _____ h _____

TOP SCORE: 16 MY SCORE: _____



Lesson 4 — NUMBERS TO FOUR PLACES

1 UNIT

Write the missing numbers:

a

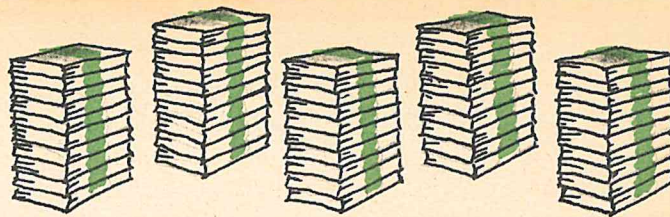
b

1. 82 is the same as ___ tens ___ ones. 47 is the same as ___ tens ___ ones.
2. 95 is the same as ___ tens ___ ones. 56 is the same as ___ tens ___ ones.
3. 429 is the same as ___ hundreds, ___ tens, ___ ones.
4. 340 is the same as ___ hundreds, ___ tens, ___ ones.
5. 508 is the same as ___ hundreds, ___ tens, ___ ones.
6. 2375 is the same as ___ thousands, ___ hundreds, ___ tens, ___ ones.
7. 5986 is the same as ___ thousands, ___ hundreds, ___ tens, ___ ones.
8. 6804 is the same as ___ thousands, ___ hundreds, ___ tens, ___ ones.

Write these numbers:	THOUSANDS	HUNDREDS	TENS	ONES
9. _____	4	6	2	3
10. _____	5	4	1	0
11. _____	3	9	8	7
12. _____	2	0	5	6

13. In the number 4265 circle the number in the tens' place.
14. In the number 2791 circle the number in the hundreds' place.
15. In the number 9780 circle the number in the ones' place.
16. In the number 8464 circle the number in the thousands' place.

Lesson 5 — WRITING LARGE NUMBERS



In a school supply room there are packages of paper (100 sheets in each package) stacked in rows, 10 packages in a stack. There are _____ sheets of paper in each stack.

1. **Write by 1000's to 10,000:** _____

2. 25,632 is the same as _____ ten thousands, _____ thousands, _____ hundreds, _____ tens, _____ ones.

3. 20,420 is the same as _____ ten thousands, _____ thousands, _____ hundreds, _____ tens, _____ ones.

4. **Count by 10,000's to 100,000:** 10,000 20,000 _____

 _____ 100,000

5. 643,249 is the same as _____ hundred thousands, _____ ten thousands, _____ thousands, _____ hundreds, _____ tens, _____ ones.

6. 903,024 is the same as _____ hundred thousands, _____ ten thousands, _____ thousands, _____ hundreds, _____ tens, _____ ones.

Write these numbers:	THOUSANDS			HUNDREDS	TENS	ONES
	HUNDREDS	TENS	ONES			
7. _____	4	7	9	2	3	1
8. _____		6	0	5	9	2
9. _____	9	3	0	7	4	3
10. _____			2	0	8	5

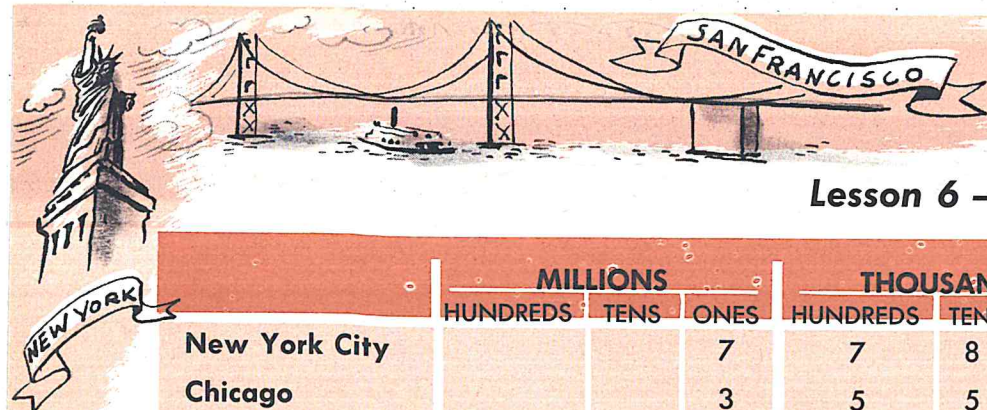
11. In the number 478,493 circle the number in the ten thousands' place.

12. In the number 870,497 circle the number in the hundred thousands' place.

13. In the number 930,682 circle the number in the thousands' place.

TOP SCORE: 47 MY SCORE: _____

UNIT 1



Lesson 6 — SEVEN-PLACE NUMBERS

	MILLIONS			THOUSANDS			UNITS		
	HUNDREDS	TENS	ONES	HUNDREDS	TENS	ONES	HUNDREDS	TENS	ONES
New York City			7	7	8	1	9	8	4
Chicago			3	5	5	0	4	0	4
Los Angeles			2	4	7	9	0	1	5
Philadelphia			2	0	0	2	5	1	2

The population of New York City is 7,781,984 (1960 census). The commas separate the figures into groups of units, thousands, and millions. Commas may be omitted in four-place numbers. Beginning at the left, read the numbers in each group, and give the name of the group with the exception of the units group. The population of New York City is read, "7 million, 781 thousand, 984."

1 UNIT

Write the populations of these cities. Place commas in the numbers:

- Chicago's population is _____, and is read, "____ million, _____ thousand, _____."
- Los Angeles' population is _____, and is read, "____ million, _____ thousand, _____."
- Philadelphia's population is _____, and is read, "____ million, _____ thousand, _____."
- The populations of other large cities of the world are: Tokyo, 9,311,774; Calcutta, 3,132,114; and London, 8,222,340.

Write on the chart the populations of these cities in order of size, beginning with the smallest:

	MILLIONS			THOUSANDS			UNITS		
	HUNDREDS	TENS	ONES	HUNDREDS	TENS	ONES	HUNDREDS	TENS	ONES

5. The value of each figure in the number 9785 is given. Add the values:

5 = 5 ones or 5

8 = 8 tens or 80

7 = 7 hundreds or 700

9 = 9 thousands or 9000

Is the sum the same as the number 9785? _____

Lesson 7 — COUNTING AND ADDING

1. Write from 1 to 21 by 2's: 1 _____
_____ 21

2. Write from 25 to 75 by 5's: 25 _____
_____ 75

3. Write from 320 to 420 by 10's: 320 _____
_____ 420

4. Write from 150 to 1050 by 100's: 150 _____
_____ 1050

5. Write from 1250 to 9250 by 1000's: 1250 _____
_____ 9250

6. Write from 12,640 to 92,640 by 10,000's: 12,640 _____
_____ 92,640

7. Add 10 to each of these numbers:

20 _____ 47 _____ 58 _____ 32 _____ 69 _____ 76 _____

8. Add 100 to each of these numbers:

200 _____ 430 _____ 781 _____ 545 _____ 652 _____ 978 _____

9. Add 1000 to each of these numbers:

3000 _____ 5200 _____ 4120 _____

7865 _____ 1759 _____ 2159 _____

10. Add 10,000 to each of these numbers:

40,000 _____ 63,000 _____ 51,301 _____

83,290 _____ 78,234 _____ 30,254 _____

11. Add 100,000 to each of these numbers:

500,000 _____ 770,000 _____ 817,000 _____

987,400 _____ 432,580 _____ 674,932 _____

UNIT 1

TOP SCORE: 88 MY SCORE: _____



Lesson 8 — ALL ABOUT TEN

Write the missing numbers:

- | | | | |
|----------------------------------|-------------------------------|-------------------------------|-------------------------------|
| a | b | c | d |
| 1. $2 + \underline{\quad} = 10$ | $7 + \underline{\quad} = 10$ | $4 + \underline{\quad} = 10$ | $5 + \underline{\quad} = 10$ |
| 2. $3 + \underline{\quad} = 10$ | $6 + \underline{\quad} = 10$ | $8 + \underline{\quad} = 10$ | $1 + \underline{\quad} = 10$ |
| 3. $10 + \underline{\quad} = 17$ | $10 + \underline{\quad} = 12$ | $\underline{\quad} + 10 = 18$ | $\underline{\quad} + 10 = 19$ |
| 4. $10 + \underline{\quad} = 15$ | $10 + \underline{\quad} = 16$ | $\underline{\quad} + 10 = 13$ | $\underline{\quad} + 10 = 14$ |

- | | | |
|-------------------------------------|----------------------------------|----------------------------------|
| a | b | c |
| 5. $2 + 3 + \underline{\quad} = 10$ | $5 + 3 + \underline{\quad} = 10$ | $4 + 5 + \underline{\quad} = 10$ |
| 6. $3 + 4 + \underline{\quad} = 10$ | $4 + 2 + \underline{\quad} = 10$ | $5 + 2 + \underline{\quad} = 10$ |
| 7. $9 + 6 = 10 + \underline{\quad}$ | $9 + 8 = 10 + \underline{\quad}$ | $5 + 9 = 10 + \underline{\quad}$ |
| 8. $5 + 7 = 10 + \underline{\quad}$ | $3 + 9 = 10 + \underline{\quad}$ | $8 + 8 = 10 + \underline{\quad}$ |

Write the answers:

- | | | | |
|-----------------------------------|-------------------------------|-------------------------------|-------------------------------|
| a | b | c | d |
| 9. $10 + 5 = \underline{\quad}$ | $10 + 1 = \underline{\quad}$ | $10 + 3 = \underline{\quad}$ | $10 + 4 = \underline{\quad}$ |
| 10. $10 + 9 = \underline{\quad}$ | $10 + 6 = \underline{\quad}$ | $10 + 8 = \underline{\quad}$ | $10 + 2 = \underline{\quad}$ |
| 11. $10 + 10 = \underline{\quad}$ | $30 + 30 = \underline{\quad}$ | $10 + 70 = \underline{\quad}$ | $80 + 10 = \underline{\quad}$ |
| 12. $20 + 40 = \underline{\quad}$ | $50 + 20 = \underline{\quad}$ | $20 + 60 = \underline{\quad}$ | $40 + 20 = \underline{\quad}$ |
| 13. $40 + 30 = \underline{\quad}$ | $60 + 10 = \underline{\quad}$ | $50 + 30 = \underline{\quad}$ | $10 + 30 = \underline{\quad}$ |
| 14. $14 + 10 = \underline{\quad}$ | $43 + 10 = \underline{\quad}$ | $71 + 10 = \underline{\quad}$ | $26 + 10 = \underline{\quad}$ |
| 15. $35 + 10 = \underline{\quad}$ | $66 + 10 = \underline{\quad}$ | $89 + 10 = \underline{\quad}$ | $48 + 10 = \underline{\quad}$ |
| 16. $27 + 10 = \underline{\quad}$ | $58 + 10 = \underline{\quad}$ | $90 + 10 = \underline{\quad}$ | $53 + 10 = \underline{\quad}$ |

17. Cross out each problem in which the sum is not 10:

$9 + 1$

$8 + 1$

$3 + 7$

$6 + 4$

$9 + 2$

$1 + 9$

18. Draw a line between the problems that have the same answer:

$6 + 9$

$8 + 7$

$8 + 6$

$8 + 5$

$7 + 6$

$5 + 9$

Lesson 9 — ADDITION FACTS

In an addition problem we call the answer the sum. Write the sums as rapidly as you can:

- | | a | b | c | d | e | f | g | h | i |
|----|---|---|---|---|---|---|---|---|---|
| 1. | $\begin{array}{r} 3 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r} 1 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 1 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 1 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 1 \\ \hline \end{array}$ |
| 2. | $\begin{array}{r} 2 \\ 1 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 1 \\ \hline \end{array}$ | $\begin{array}{r} 1 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 1 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 1 \\ \hline \end{array}$ |
| 3. | $\begin{array}{r} 3 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r} 1 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ 1 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 1 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 1 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 1 \\ 3 \\ \hline \end{array}$ |
| 4. | $\begin{array}{r} 8 \\ 1 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ 6 \\ \hline \end{array}$ |
| 5. | $\begin{array}{r} 4 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 9 \\ \hline \end{array}$ |
| 6. | $\begin{array}{r} 6 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 1 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 1 \\ 1 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$ |
| 7. | $\begin{array}{r} 8 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 2 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 4 \\ \hline \end{array}$ |
| 8. | $\begin{array}{r} 5 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 9 \\ \hline \end{array}$ |
| 9. | $\begin{array}{r} 8 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 9 \\ \hline \end{array}$ |

UNIT 1

Find the addition facts on page 158 for those you missed. Make self-study cards for the facts you do not know by putting the problem on the front and the sum on the back.

Lesson 10 — SUBTRACTION FACTS

In a subtraction problem we call the answer the difference. Write the differences as rapidly as you can:

	a	b	c	d	e	f	g	h	i
1.	$\begin{array}{r} 4 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 3 \\ \hline \end{array}$
2.	$\begin{array}{r} 8 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 4 \\ \hline \end{array}$
3.	$\begin{array}{r} 8 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 5 \\ \hline \end{array}$
4.	$\begin{array}{r} 7 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 5 \\ \hline \end{array}$
5.	$\begin{array}{r} 11 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 4 \\ \hline \end{array}$
6.	$\begin{array}{r} 13 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ 9 \\ \hline \end{array}$
7.	$\begin{array}{r} 15 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 6 \\ \hline \end{array}$
8.	$\begin{array}{r} 14 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 9 \\ \hline \end{array}$
9.	$\begin{array}{r} 14 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 8 \\ \hline \end{array}$

Find the subtraction facts on page 159 for those you missed. Make self-study cards for the facts you do not know by putting the problem on the front and the difference on the back.

Lesson 11 — ZERO

1. Find the sums. The first problem is worked for you:

a	b	c	d	e	f	g	h	i	j
4	3	8	2	7	5	1	6	9	0
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
4									

Notice that when zero is added to a number, the number is not changed. We can write this fact for any number this way: $n + 0 = n$. The letter n stands for a number.

2. Find the sums:

a	b	c	d	e	f	g	h	i
0	0	0	0	0	0	0	0	0
<u>1</u>	<u>5</u>	<u>7</u>	<u>2</u>	<u>6</u>	<u>8</u>	<u>3</u>	<u>9</u>	<u>4</u>

$0 + n = \underline{\hspace{2cm}}$ Remember that the letter n stands for any number.

3. Find the differences:

a	b	c	d	e	f	g	h	i	j
1	6	2	0	7	3	8	4	9	5
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

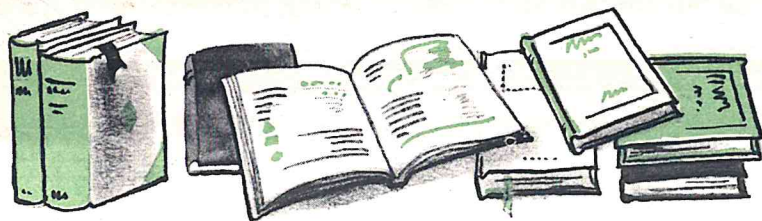
When zero is subtracted from a number, the number is not changed. A way of writing this fact for any number is $n - 0 = n$.

4. Find the differences:

a	b	c	d	e	f	g	h	i
2	8	4	5	7	3	9	6	1
<u>2</u>	<u>8</u>	<u>4</u>	<u>5</u>	<u>7</u>	<u>3</u>	<u>9</u>	<u>6</u>	<u>1</u>

When a number is subtracted from itself, the difference is zero. A way of writing this fact for any number is $n - n = 0$.

UNIT 1



Lesson 12 — ADDING COLUMNS

1. In Karen's room, there were 8 books on the first book shelf, 9 books on the second shelf, and 4 books on the third shelf. Karen placed all the books on one shelf. How many books were there on the one shelf? ____ To find how many books were on the one shelf, add.

$$\begin{array}{r} 8 \\ 9 \\ 4 \\ \hline 21 \end{array}$$

Think: $8 + 9 = 17$
Then think: $17 + 4 = 21$

Check the answer on the number line:



1 UNIT

2. In Jim's bookcase there were 6 books on the first shelf, 9 books on the second shelf, and 7 books on the third shelf. Jim placed all the books on a table. How many books did he place on the table? ____
3. At school Nancy counted the books on the reading tables. There were 12 books on the first table, 15 on the second, and 21 on the third. How many books were on the three tables? ____

$$\begin{array}{l} 12 = 1 \text{ ten and } 2 \text{ ones} \\ 15 = 1 \text{ ten and } 5 \text{ ones} \\ 21 = 2 \text{ tens and } 1 \text{ one} \\ \hline 4 \text{ tens and } 8 \text{ ones, or } 48 \end{array}$$

Here is a faster way to work the problem.

$$\begin{array}{r} 12 \\ 15 \\ 21 \\ \hline 48 \end{array}$$

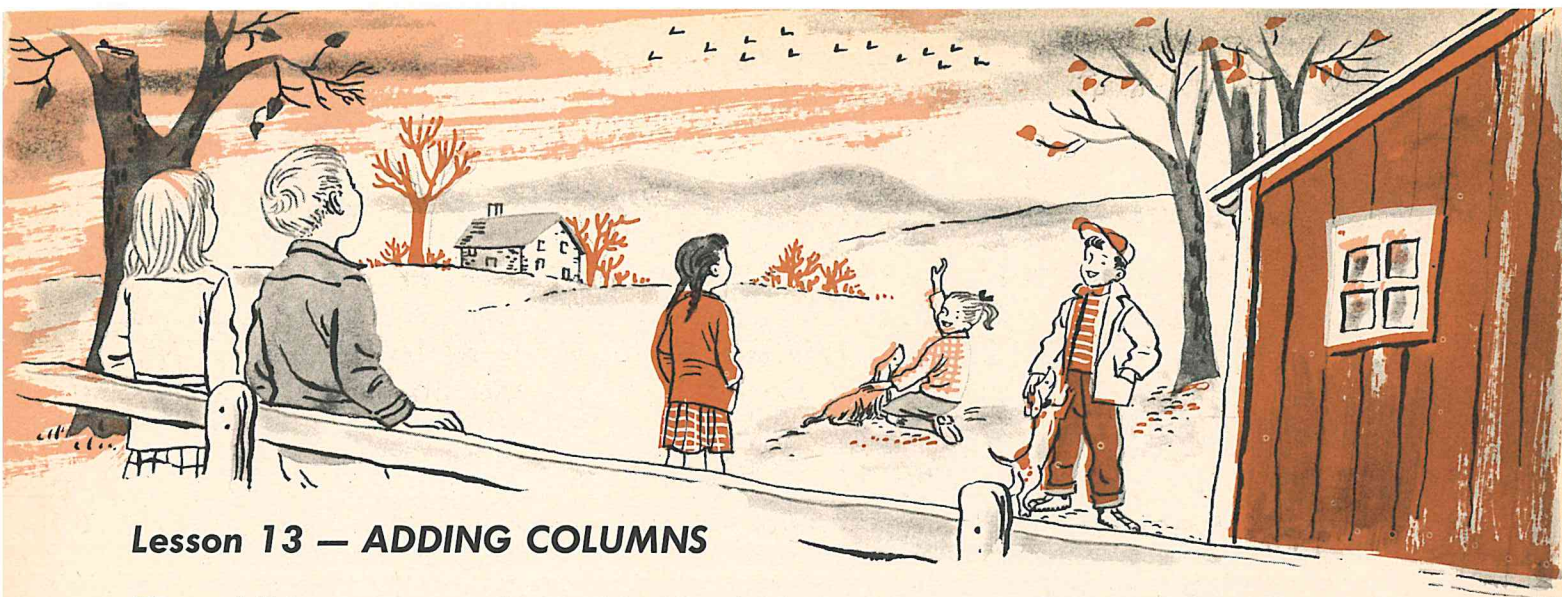
Add the ones' column: $2 + 5 + 1 = 8$
Write the 8 in the ones' place.
Add the tens' column: $1 + 1 + 2 = 4$
Write the 4 in the tens' place.

4. Don counted the books on his shelves. He counted 23 books on the first shelf, 31 on the second, 14 on the third, and 21 on the fourth. How many books were on the shelves? ____

Work Space

Write the answers:

	a	b	c	d	e	f	g	h	i	j
5.	$\begin{array}{r} 4 \\ 8 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 9 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 8 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 9 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 8 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 8 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 9 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 9 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 6 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 4 \\ 8 \\ \hline \end{array}$
6.	$\begin{array}{r} 24 \\ 23 \\ 41 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ 23 \\ 43 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 31 \\ 41 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 43 \\ 23 \\ \hline \end{array}$	$\begin{array}{r} 41 \\ 10 \\ 21 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 12 \\ 22 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ 42 \\ 16 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 21 \\ 43 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ 52 \\ 12 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ 22 \\ 33 \\ \hline \end{array}$



Lesson 13 — ADDING COLUMNS

1. The children counted the kinds of birds they saw fly over their house. One afternoon they saw 9 red birds, 14 black birds, and 12 blue birds. How many birds did they see altogether? _____

UNIT 1

Begin at the right.

Add: $9 + 4 + 2 = 15$ ones

15 ones = 1 ten and 5 ones

Add: $2 \text{ tens} + 1 \text{ ten} = 3 \text{ tens}$

$9 = 9$ ones

$14 = 1 \text{ ten and } 4 \text{ ones}$

$12 = 1 \text{ ten and } 2 \text{ ones}$

$35 = 2 \text{ tens and } 15 \text{ ones}$

or

$35 = 3 \text{ tens and } 5 \text{ ones}$

Here is a shorter way to add $9 + 14 + 12$.

Think: $9 \text{ ones} + 4 \text{ ones} = 13 \text{ ones}$. $13 \text{ ones} + 2 \text{ ones} = 15 \text{ ones}$.

9 15 ones = 1 ten and 5 ones.

14

12

35

Remember that you have 1 more ten to add to the other tens.

$1 \text{ ten} + 1 \text{ ten} + 1 \text{ ten} = 3 \text{ tens}$

2. On Saturday the children saw 29 robins, 35 sparrows, and 28 wrens. How many birds did they see on Saturday? _____

$29 = 2 \text{ tens and } 9 \text{ ones}$

$35 = 3 \text{ tens and } 5 \text{ ones}$

$28 = 2 \text{ tens and } 8 \text{ ones}$

$7 \text{ tens and } 22 \text{ ones}$

or

$92 = 9 \text{ tens and } 2 \text{ ones}$

($22 = 2 \text{ tens and } 2 \text{ ones}$
 $2 \text{ tens} + 7 \text{ tens} = 9 \text{ tens}$)

3. Find the sums:

a	b	c	d	e	f	g	h	i
9	39	44	2	45	6	93	65	48
27	29	86	58	96	17	60	71	96
<u>93</u>	<u>43</u>	<u>50</u>	<u>63</u>	<u>20</u>	<u>79</u>	<u>75</u>	<u>85</u>	<u>39</u>

Lesson 14 — ADDING COLUMNS OF LARGER NUMBERS

1. In the food store, Bob counted 235 boxes of crackers. Nancy counted 206 boxes of breakfast food, and Joan counted 198 boxes of cookies. How many boxes did the children count? _____

235 = 2 hundreds, 3 tens, 5 ones

206 = 2 hundreds, 0 tens, 6 ones

198 = 1 hundred, 9 tens, 8 ones

5 hundreds, 12 tens, 19 ones (19 ones = 1 ten, 9 ones. Add 1 ten to the other tens.)

5 hundreds, 13 tens, 9 ones (13 tens = 1 hundred, 3 tens. Add 1 to the hundreds.)

6 hundreds, 3 tens, 9 ones = **639**. Write the answer under the problem.

2. Bob also counted 295 boxes of soap flakes, 52 boxes of baking soda, and 168 boxes of salt. Bob added these numbers the short way. How many boxes did Bob count? _____

295 *Think:* 5 ones + 2 ones = 7 ones + 8 more ones = 15 ones.

52 15 ones = 1 ten and 5 ones. (Remember you have 1 more

168 ten to add in the tens' column.)

5 *Write the 5 in the ones' place.*

295 *Think:* 1 ten + 9 tens + 5 tens + 6 tens = 21 tens.

52 21 tens = 2 hundreds and 1 ten. (Remember that you have 2

168 more hundreds to add in the hundreds' column.)

15 *Write the 1 in the tens' place.*

295 *Think:* 2 hundreds + 2 hundreds + 1 hundred = 5 hundreds.

52 *Write the 5 in the hundreds' place.*

168

515

3. Find the sum. Check the answer.

Add: *Add the ones' column down:* $9 + 3 + 4 = 16$. *Add the ones' column up:*

189 $4 + 3 + 9 = \underline{\quad}$. Do you see that the order you use in adding numbers does not make any difference in the answer?

243 *Add down the column to find the sum:* $189 + 243 + 484 = \underline{\quad}$.

484 *Now add up to check the answer:* $484 + 243 + 189 = \underline{\quad}$.

Check: If you get the same answer as when you added down, the answer is probably correct. A good plan: **Add down. Check up.**

4. Find the sums. Check the answers:

a	b	c	d	e	f	g
89	367	579	571	796	64	306
234	49	318	206	75	47	178
584	80	85	75	70	746	234

Lesson 15 — USING MONEY



penny

1 cent

1¢ \$.01



nickel

5 cents

5¢ \$.05

5 pennies



dime

10 cents

10¢ \$.10

2 nickels

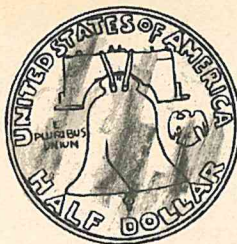


quarter

25 cents

25¢ \$.25

5 nickels



half dollar

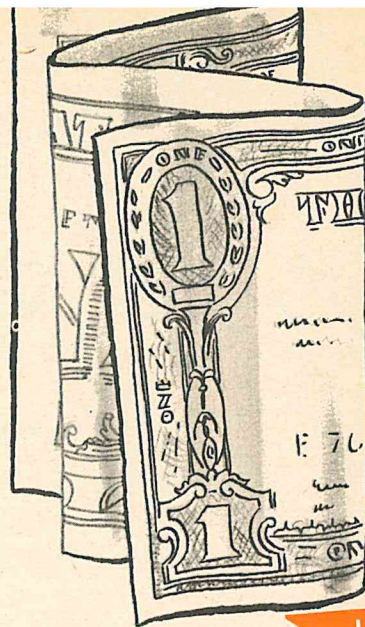
50 cents

50¢ \$.50

2 quarters

5 dimes

10 nickels



UNIT 1

\$1.00 100 cents 10 dimes 4 quarters 2 half dollars one dollar

A point is always put between the dollars and the cents and is read and. 2 dollars and 85 cents is written \$2.85.

1. Write these amounts using the dollar sign and the point:

a. 6 dollars and 47 cents _____ b. 5 dollars and 70 cents _____

c. 10 dollars and 15 cents _____

Always have two places for cents. When the number of cents is less than 10, use a zero next to the point. 1 dollar and 6 cents is written \$1.06.

2. Write in figures:

a. 9 dollars and 1 cent _____

b. 7 dollars and 9 cents _____

c. 10 dollars and 2 cents _____

3. Draw a line to the one of equal value:

4 nickels and 3 pennies 75¢

2 dimes and 1 nickel 25¢

1 quarter and 1 dime 23¢

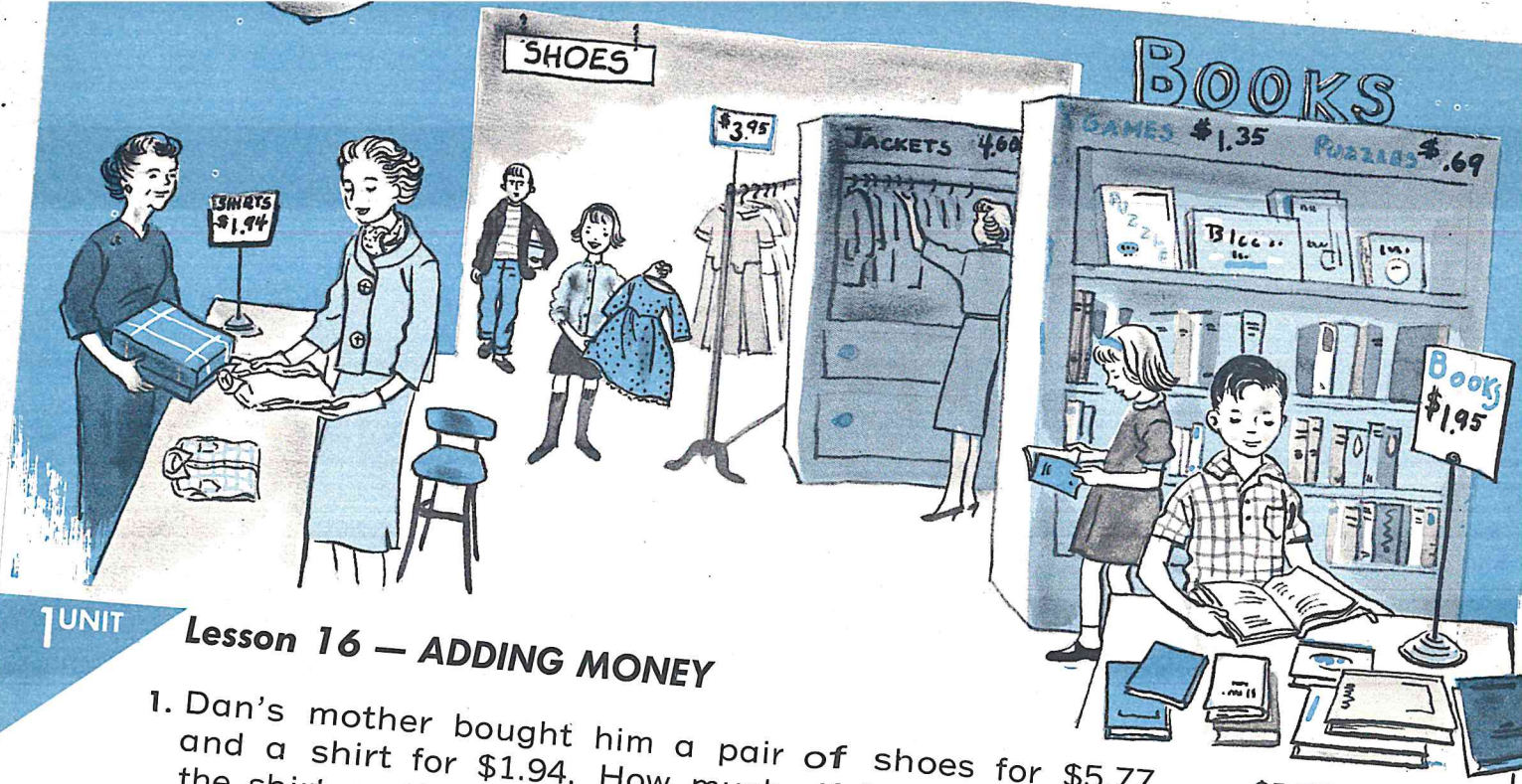
1 half-dollar and 1 quarter \$1.00

6 dimes 35¢

4 quarters 60¢

4. How much money?

QUARTERS	DIMES	NICKELS	PENNIES
	1	1	2
1	1		
1		1	
	2		5
1		2	



UNIT

Lesson 16 — ADDING MONEY

1. Dan's mother bought him a pair of shoes for \$5.77 and a shirt for \$1.94. How much **did** the shoes and the shirt cost? _____

This problem is worked for you.

$$\begin{array}{r} \$5.77 \\ + 1.94 \\ \hline \$7.71 \end{array}$$

Notice that dollars and cents are added the same way other numbers are added. The points must be kept in a straight line. A point and a dollar sign must be placed in the answer.

2. Sue's new dress cost \$3.95, her hair bow cost \$.52, and her jacket cost \$4.68. How much did Sue's clothes cost? _____

$$\begin{array}{r} \$3.95 \\ + .52 \\ \hline 4.68 \end{array}$$

3. In the toy department Dan bought a book for \$1.95, a puzzle for \$.69, and a game for \$1.35. How much did Dan spend? _____

Work Space

Find the sums. Check your answers:

a	b	c	d	e	f
4. $\begin{array}{r} \$2.98 \\ 1.78 \\ \hline \end{array}$	$\begin{array}{r} \$1.42 \\ 3.68 \\ \hline \end{array}$	$\begin{array}{r} \$5.68 \\ 1.97 \\ \hline \end{array}$	$\begin{array}{r} \$2.47 \\ 4.27 \\ \hline \end{array}$	$\begin{array}{r} \$2.45 \\ 6.19 \\ \hline \end{array}$	$\begin{array}{r} \$2.75 \\ 1.99 \\ \hline \end{array}$
5. $\begin{array}{r} \$6.58 \\ 8.49 \\ 7.37 \\ \hline \end{array}$	$\begin{array}{r} \$2.35 \\ 4.95 \\ 5.76 \\ \hline \end{array}$	$\begin{array}{r} \$6.59 \\ 2.68 \\ 8.54 \\ \hline \end{array}$	$\begin{array}{r} \$7.57 \\ 7.54 \\ 1.76 \\ \hline \end{array}$	$\begin{array}{r} \$7.28 \\ 9.44 \\ 1.82 \\ \hline \end{array}$	$\begin{array}{r} \$8.19 \\ 9.32 \\ 7.65 \\ \hline \end{array}$
6. $\begin{array}{r} \$.89 \\ 2.43 \\ 5.84 \\ \hline \end{array}$	$\begin{array}{r} \$3.67 \\ .43 \\ .80 \\ \hline \end{array}$	$\begin{array}{r} \$5.79 \\ 3.18 \\ .85 \\ \hline \end{array}$	$\begin{array}{r} \$5.71 \\ 2.16 \\ .75 \\ \hline \end{array}$	$\begin{array}{r} \$7.46 \\ .75 \\ .70 \\ \hline \end{array}$	$\begin{array}{r} \$.64 \\ .47 \\ 7.46 \\ \hline \end{array}$

Lesson 17 — CHECKING SUBTRACTION

1. There were 61 children at the fourth-grade picnic. While the others watched, 35 of the children ran a race. How many of the children watched the race? _____

You cannot take 5 ones from 1 one. Take one ten from the 6 tens and change it to 10 ones. 6 tens - 1 ten = 5 tens. 10 ones + 1 one = 11 ones.

Subtract: 11 ones - 5 ones = 6 ones.

Write the 6 in the ones' place.

Subtract: 5 tens - 3 tens = 2 tens.

Write the 2 in the tens' place.

$$\begin{array}{r} 61 = 6 \text{ tens } 1 \text{ one} \\ 35 = 3 \text{ tens } 5 \text{ ones} \\ \hline \end{array}$$

$$\begin{array}{r} 61 = 5 \text{ tens } 11 \text{ ones} \\ 35 = 3 \text{ tens } 5 \text{ ones} \\ \hline 2 \text{ tens } 6 \text{ ones} = 26 \end{array}$$



2. Of the 35 children running the race, only 17 finished in less than one minute. How many children did not finish in less than one minute? _____

$$\begin{array}{r} 35 \\ -17 \\ \hline 18 \end{array}$$

Write 8 in the ones' place.

Since 1 of the 3 tens was changed to ones, subtract 3 - 1 = 2. 2 tens - 1 ten = 1 ten.

Write 1 in the tens' place.

To check the answer in subtraction, add the two smallest numbers. If the answer is correct, the sum will be the same as the largest number. Can you see from the number line why this is so?



Check your answer:

Subtract: $17 - 8 = 9$

Check: $8 + 9 = 17$

$$\begin{array}{r} 17 \\ -8 \\ \hline 9 \end{array} \quad \begin{array}{r} 8 \\ +9 \\ \hline 17 \end{array}$$

3. Find the differences. Check your answers:

a
 $\begin{array}{r} 87 \\ 29 \\ \hline \end{array}$

b
 $\begin{array}{r} 95 \\ 37 \\ \hline \end{array}$

c
 $\begin{array}{r} 77 \\ 68 \\ \hline \end{array}$

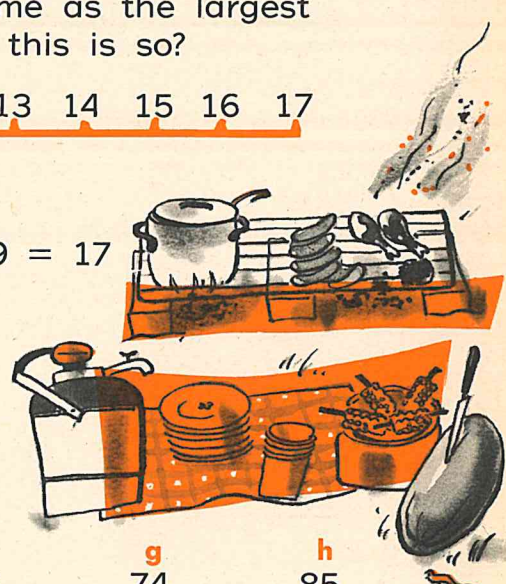
d
 $\begin{array}{r} 94 \\ 28 \\ \hline \end{array}$

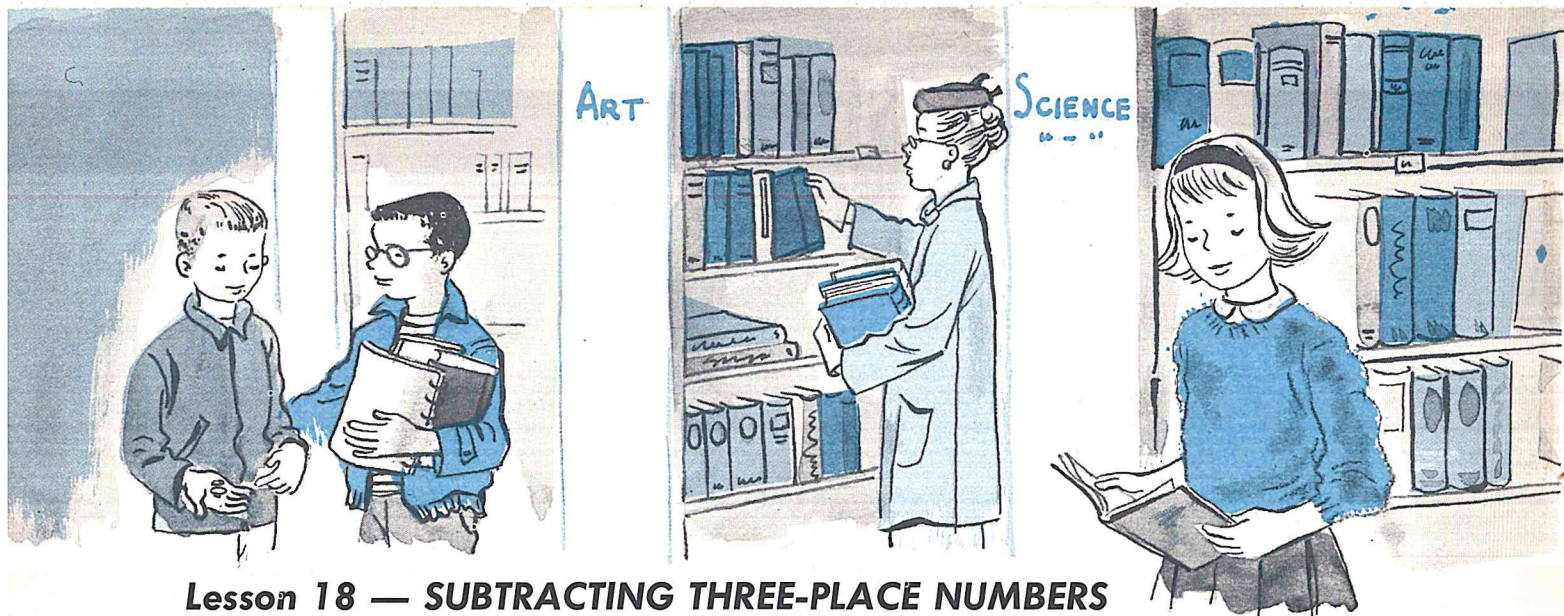
e
 $\begin{array}{r} 46 \\ 12 \\ \hline \end{array}$

f
 $\begin{array}{r} 96 \\ 59 \\ \hline \end{array}$

g
 $\begin{array}{r} 74 \\ 25 \\ \hline \end{array}$

h
 $\begin{array}{r} 85 \\ 38 \\ \hline \end{array}$





Lesson 18 — SUBTRACTING THREE-PLACE NUMBERS

UNIT

1. In a bookstore Ann counted 324 story books and 175 science books. How many more story books than science books did she count? _____

$324 = 3 \text{ hundreds, } 2 \text{ tens, } 4 \text{ ones}$

$175 = 1 \text{ hundred, } 7 \text{ tens, } 5 \text{ ones}$

Begin at the right. You cannot take 5 ones from 4 ones.

Change one of the 2 tens to 10 ones. $10 \text{ ones} + 4 \text{ ones} = 14 \text{ ones}$.
 $2 \text{ tens} - 1 \text{ ten} = 1 \text{ ten}$.

$324 = 3 \text{ hundreds, } 1 \text{ ten, } 14 \text{ ones}$

$175 = 1 \text{ hundred, } 7 \text{ tens, } 5 \text{ ones}$

Subtract:

$14 \text{ ones} - 5 \text{ ones} = 9 \text{ ones}$.

Write the 9 in the ones' place.

9 ones

You cannot take 7 tens from 1 ten. Change 1 of the hundreds to 10 tens. $10 \text{ tens} + 1 \text{ ten} = 11 \text{ tens}$. $3 \text{ hundreds} - 1 \text{ hundred} = 2 \text{ hundreds}$.

Subtract:

$11 \text{ tens} - 7 \text{ tens} = 4 \text{ tens}$.

Write the 4 in the tens' place.

$324 = 2 \text{ hundreds, } 11 \text{ tens, } 14 \text{ ones}$

$175 = 1 \text{ hundred, } 7 \text{ tens, } 5 \text{ ones}$

$149 = 1 \text{ hundred, } 4 \text{ tens, } 9 \text{ ones}$

$2 \text{ hundreds} - 1 \text{ hundred} = 1 \text{ hundred}$.

Write the 1 in the hundreds' place.

2. During the week 259 story books were sold. How many were left in the store? _____

You will have to use information from problem 1 in order to solve this problem.

Subtract and check the answers:

Work Space

a

$$\begin{array}{r} 3. \ 833 \\ - 597 \\ \hline \end{array}$$

b

$$\begin{array}{r} 517 \\ - 348 \\ \hline \end{array}$$

c

$$\begin{array}{r} 818 \\ - 569 \\ \hline \end{array}$$

d

$$\begin{array}{r} 651 \\ - 465 \\ \hline \end{array}$$

e

$$\begin{array}{r} 376 \\ - 197 \\ \hline \end{array}$$

a

$$\begin{array}{r} 4. \ 925 \\ - 257 \\ \hline \end{array}$$

b

$$\begin{array}{r} 452 \\ - 278 \\ \hline \end{array}$$

c

$$\begin{array}{r} 384 \\ - 198 \\ \hline \end{array}$$

d

$$\begin{array}{r} 623 \\ - 256 \\ \hline \end{array}$$

e

$$\begin{array}{r} 514 \\ - 148 \\ \hline \end{array}$$



Lesson 19 — SUBTRACTING MONEY

UNIT 1

1. John had \$4.25. He paid \$2.59 for books. How much money did he have left? _____

To find how much money John had left, subtract \$2.59 from \$4.25. Dollars and cents are subtracted the same way other numbers are subtracted. The points must be kept in a straight line. A dollar sign and a point must be placed in the answer.

$$\begin{array}{r} \$4.25 \\ -2.59 \\ \hline \$1.66 \end{array}$$

2. Dee had \$3.15. She spent \$1.77 for a book. How much money did she have left? _____

Work Space

4. Sue had \$5.20. She bought books for \$3.85. How much money did she have left? _____

Work Space

3. Bill had \$3.65. He bought a book for \$.70. How much money did he have left? _____

$$\begin{array}{r} \$3.65 \\ - .70 \\ \hline \end{array}$$

5. Don had \$2.25 to buy books. He spent \$.85. How much money did Don have left? _____

Find the differences. Check your answers:

a

$$\begin{array}{r} 6. \$8.33 \\ - 5.97 \\ \hline \end{array}$$

b

$$\begin{array}{r} \$5.17 \\ - 3.50 \\ \hline \end{array}$$

c

$$\begin{array}{r} \$6.51 \\ - 4.65 \\ \hline \end{array}$$

d

$$\begin{array}{r} \$7.14 \\ - 2.98 \\ \hline \end{array}$$

e

$$\begin{array}{r} \$5.24 \\ - 2.16 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \$3.41 \\ - .98 \\ \hline \end{array}$$

$$\begin{array}{r} \$5.13 \\ - .30 \\ \hline \end{array}$$

$$\begin{array}{r} \$1.75 \\ - .96 \\ \hline \end{array}$$

$$\begin{array}{r} \$9.34 \\ - .84 \\ \hline \end{array}$$

$$\begin{array}{r} \$7.61 \\ - .87 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \$3.17 \\ - 1.89 \\ \hline \end{array}$$

$$\begin{array}{r} \$6.45 \\ - 3.79 \\ \hline \end{array}$$

$$\begin{array}{r} \$3.62 \\ - 1.95 \\ \hline \end{array}$$

$$\begin{array}{r} \$2.26 \\ - .38 \\ \hline \end{array}$$

$$\begin{array}{r} \$4.45 \\ - .98 \\ \hline \end{array}$$

TOP SCORE: 35 MY SCORE: _____



Lesson 20 — SUBTRACTING THREE-PLACE NUMBERS

1. Chris helped his uncle with the cattle. In the east and the west ranges there were 309 head of cattle. In the west range there were 162 head of cattle. How many cattle were in the east? _____

309 = 3 hundreds, 0 tens, 9 ones

162 = 1 hundred, 6 tens, 2 ones

7 ones

Subtract: 9 ones - 2 ones = 7 ones.
Write the 7 in the ones' place.

Now subtract the tens. 6 tens cannot be subtracted from 0 tens. Change one of the hundreds to 10 tens. 0 tens + 10 tens = 10 tens. 3 hundreds - 1 hundred = 2 hundreds. Subtract:

309 = 2 hundreds, 10 tens, 9 ones

162 = 1 hundred, 6 tens, 2 ones

147 = 1 hundred, 4 tens, 7 ones

10 tens - 6 tens = 4 tens.

Write the 4 in the tens' place.

2 hundreds - 1 hundred = 1 hundred.
Write the 1 in the hundreds' place.

2. At a cattle sale, 402 cattle were sold in the morning and 267 in the afternoon. How many more cattle were sold in the morning than in the afternoon? _____

402 = 4 hundreds, 0 tens, 2 ones

267 = 2 hundreds, 6 tens, 7 ones

You cannot take 7 ones from 2 ones, but there are no tens to change into ones.

First change one of the 4 hundreds to 10 tens.
10 tens + 0 tens = 10 tens.

4 hundreds - 1 hundred = 3 hundreds.

402 = 3 hundreds, 10 tens, 2 ones

Now change one of the 10 tens to 10 ones.
10 ones + 2 ones = 12 ones.

10 tens - 1 ten = 9 tens.

12 ones - 7 ones = 5 ones.

Write the 5 in the ones' place.

9 tens - 6 tens = 3 tens.

Write the 3 in the tens' place.

3 hundreds - 2 hundreds = 1 hundred.
Write the 1 in the hundreds' place.

402 = 3 hundreds, 9 tens, 12 ones

267 = 2 hundreds, 6 tens, 7 ones

135 = 1 hundred, 3 tens, 5 ones

Find the differences:

a

$$\begin{array}{r} 3. \ 905 \\ - 423 \\ \hline \end{array}$$

b

$$\begin{array}{r} 752 \\ - 503 \\ \hline \end{array}$$

c

$$\begin{array}{r} 771 \\ - 504 \\ \hline \end{array}$$

d

$$\begin{array}{r} 890 \\ - 304 \\ \hline \end{array}$$

e

$$\begin{array}{r} 374 \\ - 192 \\ \hline \end{array}$$

f

$$\begin{array}{r} 892 \\ - 293 \\ \hline \end{array}$$

g

$$\begin{array}{r} 473 \\ - 179 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \ 904 \\ - 239 \\ \hline \end{array}$$

$$\begin{array}{r} 504 \\ - 236 \\ \hline \end{array}$$

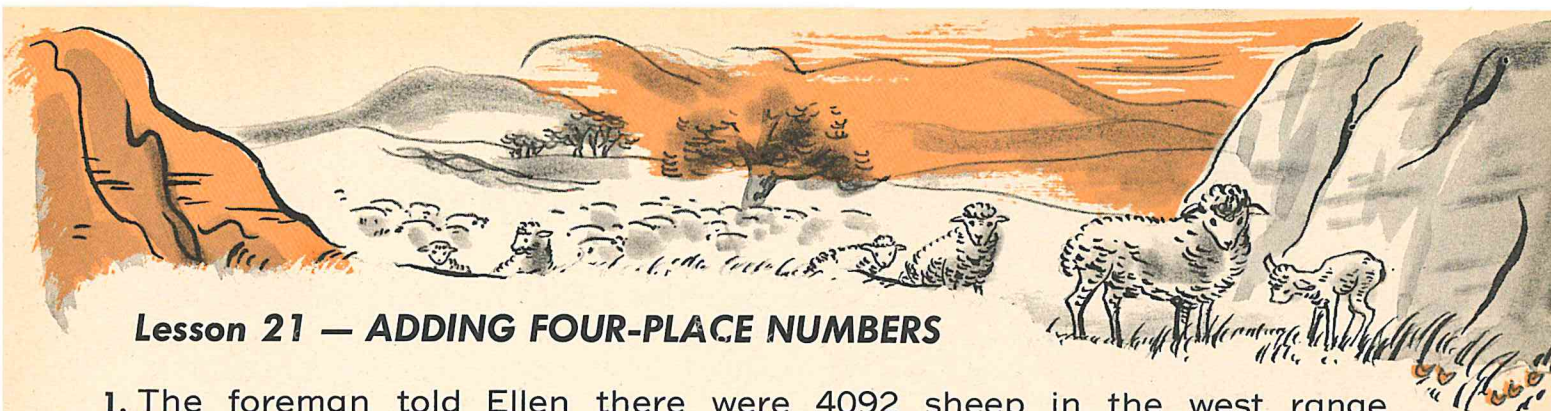
$$\begin{array}{r} 427 \\ - 108 \\ \hline \end{array}$$

$$\begin{array}{r} 606 \\ - 478 \\ \hline \end{array}$$

$$\begin{array}{r} 502 \\ - 339 \\ \hline \end{array}$$

$$\begin{array}{r} 603 \\ - 419 \\ \hline \end{array}$$

$$\begin{array}{r} 982 \\ - 796 \\ \hline \end{array}$$



Lesson 21 — ADDING FOUR-PLACE NUMBERS

1. The foreman told Ellen there were 4092 sheep in the west range and 3309 on the east side. How many sheep were there on both ranges? _____

4092 = 4 thousands, 0 hundreds, 9 tens, and 2 ones *Begin at the right:*

3309 = 3 thousands, 3 hundreds, 0 tens, and 9 ones

7 thousands, 3 hundreds, 9 tens, and 11 ones 11 ones = 1 ten, 1 one

7 thousands, 3 hundreds, 10 tens, and 1 one 10 tens = 1 hundred, 0 tens

7 thousands, 4 hundreds, 0 tens, and 1 one = **7401**

Write the answer under the problem.

UNIT 1

2. Uncle Ned said 3004 sheep were sheared last year and 5129 the year before. How many were sheared in these two years? _____

3. This year a total of 1979 lambs have been taken to market. Last year the total was 3098. What was the total for the two years? _____

Work Space

Find the sums:

	a	b	c	d	e	f
4.	$\begin{array}{r} 4625 \\ 2859 \end{array}$	$\begin{array}{r} 6790 \\ 2479 \end{array}$	$\begin{array}{r} 7308 \\ 1907 \end{array}$	$\begin{array}{r} 1925 \\ 3576 \end{array}$	$\begin{array}{r} 2356 \\ 4849 \end{array}$	$\begin{array}{r} 3749 \\ 5651 \end{array}$

5.	$\begin{array}{r} 1732 \\ 5538 \end{array}$	$\begin{array}{r} 2084 \\ 4963 \end{array}$	$\begin{array}{r} 4163 \\ 3094 \end{array}$	$\begin{array}{r} 3051 \\ 6009 \end{array}$	$\begin{array}{r} 6970 \\ 2360 \end{array}$	$\begin{array}{r} 5849 \\ 1055 \end{array}$
----	---	---	---	---	---	---

6.	$\begin{array}{r} 18045 \\ 17487 \end{array}$	$\begin{array}{r} 59606 \\ 38396 \end{array}$	$\begin{array}{r} 30907 \\ 62058 \end{array}$	$\begin{array}{r} 40818 \\ 51749 \end{array}$	$\begin{array}{r} 23700 \\ 40630 \end{array}$	$\begin{array}{r} 40725 \\ 29512 \end{array}$
----	---	---	---	---	---	---

Find the sums. Write only the answers:

	a	b	c
7.	$4000 + 3000 = \underline{\hspace{2cm}}$	$1985 + 1001 = \underline{\hspace{2cm}}$	$2603 + 1020 = \underline{\hspace{2cm}}$
8.	$3980 + 5000 = \underline{\hspace{2cm}}$	$2000 + 1700 = \underline{\hspace{2cm}}$	$6050 + 1239 = \underline{\hspace{2cm}}$
9.	$5600 + 2040 = \underline{\hspace{2cm}}$	$5006 + 1100 = \underline{\hspace{2cm}}$	$4758 + 4000 = \underline{\hspace{2cm}}$



Lesson 22 — SUBTRACTING FOUR-PLACE NUMBERS

1. Don kept a record of the miles his father drove the new car. At the end of the first month the record showed 2379 miles, and at the end of the second month the mileage was 4002. How many miles was the car driven the second month? _____ The answer is $4002 - 2379$.

$4002 = 4$ thousands, 0 hundreds, 0 tens, 2 ones Begin at the right. You cannot subtract 9 ones from 2 ones.
 $2379 = 2$ thousands, 3 hundreds, 7 tens, 9 ones

There are no tens to change into ones. There are no hundreds to change into tens. Change one of the 4 thousands to 10 hundreds.
 $4 - 1 = 3$ thousands.

UNIT $4002 = 3$ thousands, 10 hundreds, 0 tens, 2 ones Change 1 of the 10 hundreds to 10 tens.

or
 $4002 = 3$ thousands, 9 hundreds, 10 tens, 2 ones $10 - 1 = 9$ hundreds.

Now change one of the 10 tens to 10 ones. $10 - 1 = 9$ tens.
 $10 + 2 = 12$ ones

Subtract: $4002 = 3$ thousands, 9 hundreds, 9 tens, 12 ones
 $2379 = 2$ thousands, 3 hundreds, 7 tens, 9 ones
 $1623 = 1$ thousand, 6 hundreds, 2 tens, 3 ones

2. Jack saw a transport truck carrying two new trucks. The total weight of the new trucks was 7050 pounds. One of the trucks weighed 3575 pounds. Find the weight of the other truck. _____

Work Space

Subtract:

	a	b	c	d	e
3.	$\begin{array}{r} 6092 \\ 2368 \\ \hline \end{array}$	$\begin{array}{r} 4702 \\ 1389 \\ \hline \end{array}$	$\begin{array}{r} 5800 \\ 1970 \\ \hline \end{array}$	$\begin{array}{r} 6907 \\ 4328 \\ \hline \end{array}$	$\begin{array}{r} 8003 \\ 5892 \\ \hline \end{array}$
4.	$\begin{array}{r} 8439 \\ 3844 \\ \hline \end{array}$	$\begin{array}{r} 7483 \\ 4790 \\ \hline \end{array}$	$\begin{array}{r} 9546 \\ 3257 \\ \hline \end{array}$	$\begin{array}{r} 3784 \\ 1926 \\ \hline \end{array}$	$\begin{array}{r} 9643 \\ 5892 \\ \hline \end{array}$
5.	$\begin{array}{r} 47213 \\ 29140 \\ \hline \end{array}$	$\begin{array}{r} 85962 \\ 37394 \\ \hline \end{array}$	$\begin{array}{r} 63481 \\ 47591 \\ \hline \end{array}$	$\begin{array}{r} 70624 \\ 29376 \\ \hline \end{array}$	$\begin{array}{r} 93264 \\ 21904 \\ \hline \end{array}$

Subtract:

	a	b	c
6.	$7000 - 3000 = \underline{\hspace{2cm}}$	$3400 - 2400 = \underline{\hspace{2cm}}$	$5009 - 3009 = \underline{\hspace{2cm}}$
7.	$2900 - 1000 = \underline{\hspace{2cm}}$	$4978 - 1000 = \underline{\hspace{2cm}}$	$6009 - 4000 = \underline{\hspace{2cm}}$
8.	$3860 - 2000 = \underline{\hspace{2cm}}$	$6973 - 4000 = \underline{\hspace{2cm}}$	$7050 - 3000 = \underline{\hspace{2cm}}$

Lesson 23 — PRACTICE

Find the sums:

	a	b	c	d	e	f	g	h	i	j
1.	45 33 <u>67</u>	38 87 <u>68</u>	97 78 <u>65</u>	45 85 <u>58</u>	42 33 <u>66</u>	58 49 <u>43</u>	45 38 <u>65</u>	97 79 <u>33</u>	59 86 <u>33</u>	43 58 <u>85</u>

	a	b	c	d	e	f	g	h
2.	578 197 <u>325</u>	603 826 <u>576</u>	641 675 <u>154</u>	869 505 <u>925</u>	815 610 <u>345</u>	498 934 <u>256</u>	488 384 <u>302</u>	175 744 <u>134</u>

3.	5729 1548 <u>1548</u>	7816 2075 <u>2075</u>	6026 2954 <u>2954</u>	6008 3480 <u>3480</u>	3146 9026 <u>9026</u>	2056 2641 <u>2641</u>	2096 3006 <u>3006</u>	7816 1548 <u>1548</u>
----	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Find the differences:

	a	b	c	d	e	f	g	h	i	j
4.	87 19 <u>19</u>	90 88 <u>88</u>	94 30 <u>30</u>	80 43 <u>43</u>	68 39 <u>39</u>	95 40 <u>40</u>	80 79 <u>79</u>	70 45 <u>45</u>	89 67 <u>67</u>	56 29 <u>29</u>

	a	b	c	d	e	f	g	h
5.	755 298 <u>298</u>	623 175 <u>175</u>	800 237 <u>237</u>	956 309 <u>309</u>	853 406 <u>406</u>	907 395 <u>395</u>	538 246 <u>246</u>	600 428 <u>428</u>

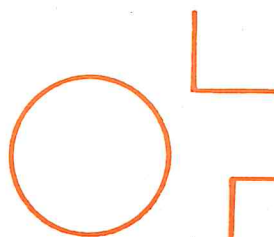
6.	7734 3080 <u>3080</u>	4035 2706 <u>2706</u>	5000 2174 <u>2174</u>	7050 2202 <u>2202</u>	8825 2060 <u>2060</u>	5046 2807 <u>2807</u>	6000 3149 <u>3149</u>	7060 4404 <u>4404</u>
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Write the missing numbers:

	a	b	c
7.	$2 + \underline{\quad} = 11$	$2 + 3 + \underline{\quad} = 10$	$3 + 4 + \underline{\quad} = 10$
8.	$\underline{\quad} + 5 = 12$	$5 + 3 + \underline{\quad} = 10$	$2 + 6 + \underline{\quad} = 10$
9.	$9 + 3 = \underline{\quad}$	$7 + 8 = \underline{\quad}$	$4 + 2 + \underline{\quad} = 10$
10.	$9 + \underline{\quad} = 14$	$\underline{\quad} + 6 = 11$	$2 + 7 + \underline{\quad} = 10$

Lesson 24 — REVIEW

1. Draw a line from each picture to the correct name:



circle

square

right angle

4. Draw a ring around each 3. Then draw a line to its value:

1413

millions

6321

ten thousands

3,940,625

thousands

236,187

ones

3451

hundreds

UNIT

2. Jane saw 24 black birds and 16 blue birds. How many birds did she see? ____

Work Space

5. Bob had \$2.15. How much did he have left after he spent \$.36 for rides? ____

Work Space

3. Ned saw 27 boats on the lake. 9 of the boats came to shore. How many were left on the lake? ____

6. There were 18 boys and 9 girls playing games in the park. How many boys and girls were playing? ____

7. Add 100 to each of these numbers:

136 ____ 342 ____ 597 ____ 704 ____ 460 ____ 201 ____

Write the missing numbers:

8. $4 + 1 + \overset{a}{\quad} = 10$ $7 + 5 + \overset{b}{10} = \quad$ $9 + \overset{c}{6} = \quad$ $13 - \overset{d}{5} = \quad$

9. $2 + 5 + \quad = 10$ $9 + 6 + 10 = \quad$ $\quad + 7 = 13$ $\quad - 6 = 9$

10. $3 + 6 + \quad = 10$ $8 + 9 + 10 = \quad$ $4 + \quad = 11$ $11 - \quad = 5$

11. Find the sums. Check your answers:

$\overset{a}{\begin{array}{r} 26 \\ 31 \\ 18 \\ \hline \end{array}}$

$\overset{b}{\begin{array}{r} 49 \\ 10 \\ 35 \\ \hline \end{array}}$

$\overset{c}{\begin{array}{r} 175 \\ 236 \\ 427 \\ \hline \end{array}}$

$\overset{d}{\begin{array}{r} \$5.31 \\ 1.87 \\ 2.04 \\ \hline \end{array}}$

$\overset{e}{\begin{array}{r} 4903 \\ 5787 \\ \hline \end{array}}$

12. Find the differences. Check your answers:

$\begin{array}{r} 902 \\ 358 \\ \hline \end{array}$

$\begin{array}{r} 7805 \\ 4918 \\ \hline \end{array}$

$\begin{array}{r} \$6.50 \\ 3.65 \\ \hline \end{array}$

$\begin{array}{r} \$2.34 \\ .85 \\ \hline \end{array}$

$\begin{array}{r} 4304 \\ 2473 \\ \hline \end{array}$

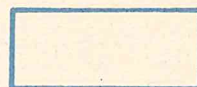
Lesson 25 — TEST YOURSELF

1. Draw a ring around each 5. Then draw a line to its value:

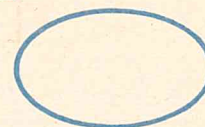
1457	millions
5823	hundred thousands
256,820	ten thousands
5,642,287	tens
563,203	thousands

5. Draw a line from each picture to the correct name:

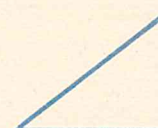
oval



right triangle



rectangle



2. Bob spent \$2.83 during a month, and Jane spent \$3.25. How much did they spend altogether? _____

Work Space

3. Tom had 302 marbles and Dick had 273 marbles. How many more marbles did Tom have than Dick? _____

4. The children paid \$2.97 to ride the merry-go-round, \$1.53 to ride the ferris wheel, and \$2.25 to ride the little train. How much did they spend? _____

6. There were 20 children riding on the ponies. If 6 of them got off, how many were still riding? _____

Work Space

7. There were 27 children at a birthday party. 19 went home early. How many were left? _____

8. Attendance at a theater was 353 one day, 407 another, and 229 a third day. What was the total attendance for the three days? _____

UNIT 1

9. Find the sums. Check your answers:

a	b	c	d	e
47	165	406	\$5.82	
30	247	290	1.30	6823
98	328	879	2.09	2097

10. Find the differences. Check your answers:

92	905	\$6.47	7627	9023
27	628	2.88	1738	3908

TOP SCORE: 29 MY SCORE: _____

Lesson 1 — FASTER WAYS OF ADDING AND SUBTRACTING

1. Add 8 to each number. Write the sums only:

a	b	c	d	e	f	g	h	i
<u>8</u>	<u>6</u>	<u>2</u>	<u>4</u>	<u>1</u>	<u>5</u>	<u>3</u>	<u>7</u>	<u>9</u>

2. Subtract 7 from each number. Write only the differences:

<u>11</u>	<u>15</u>	<u>8</u>	<u>10</u>	<u>13</u>	<u>9</u>	<u>16</u>	<u>14</u>	<u>12</u>
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Subtract. Write only the answers. The first two are done for you:

$50 - 12 = \underline{\quad}$	Think: $50 - 10 = 40$	$40 - 2 = 38$	$40 - 24 = \underline{\quad}$	Think: $40 - 20 = 20$	$20 - 4 = 16$
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2^{UNIT}

a	b	c	d
3. $50 - 16 = \underline{\quad}$	$70 - 36 = \underline{\quad}$	$60 - 22 = \underline{\quad}$	$80 - 28 = \underline{\quad}$

4. $40 - 16 = \underline{\quad}$	$80 - 47 = \underline{\quad}$	$90 - 63 = \underline{\quad}$	$50 - 21 = \underline{\quad}$
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Add. Write only the answers. The first two are done for you:

$27 + 9 = \underline{\quad}$	Think: $27 + 10 = 37$	$37 - 1 = 36$	$55 + 12 = \underline{\quad}$	Think: $55 + 10 = 65$	$65 + 2 = 67$
------------------------------	-----------------------	---------------	-------------------------------	-----------------------	---------------

a	b	c	d
5. $28 + 11 = \underline{\quad}$	$83 + 15 = \underline{\quad}$	$76 + 12 = \underline{\quad}$	$47 + 12 = \underline{\quad}$

6. $43 + 14 = \underline{\quad}$	$34 + 12 = \underline{\quad}$	$65 + 14 = \underline{\quad}$	$74 + 13 = \underline{\quad}$
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When adding, the symbols (), called parentheses, may be used to help group numbers.

Add the numbers in the parentheses first:

$(6 + 3) + 5 = \underline{\quad}$

Think: $9 + 5 = 14$ or Think: $6 + 8 = 14$

$6 + (3 + 5) = \underline{\quad}$

a	b	c
7. $(9 + 5) + 4 = \underline{\quad}$	$(8 + 4) + 3 = \underline{\quad}$	$(5 + 3) + 6 = \underline{\quad}$

8. $9 + (5 + 4) = \underline{\quad}$	$8 + (4 + 3) = \underline{\quad}$	$5 + (3 + 6) = \underline{\quad}$
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When adding, the grouping of numbers in different ways does not change the sum.

Lesson 2 — MULTIPLYING BY TWO

There is another way to add. That is by multiplying. The multiplication sign is written X. It is read either **times** or **multiplied by**.

Write the answers:

a 

1. Two 1's are ____

$$\begin{array}{r} 1 + 1 = \underline{\quad} \\ 2 \times 1 = \underline{\quad} \quad \begin{array}{r} 1 \\ \times 2 \end{array} \quad \begin{array}{r} 2 \\ \times 1 \end{array} \\ 1 \times 2 = \underline{\quad} \end{array}$$



2. Two 2's are ____

$$\begin{array}{r} 2 + 2 = \underline{\quad} \\ 2 \times 2 = \underline{\quad} \quad \begin{array}{r} 2 \\ \times 2 \end{array} \end{array}$$



3. Two 3's are ____

$$\begin{array}{r} 3 + 3 = \underline{\quad} \\ 2 \times 3 = \underline{\quad} \quad \begin{array}{r} 3 \\ \times 2 \end{array} \quad \begin{array}{r} 2 \\ \times 3 \end{array} \\ 3 \times 2 = \underline{\quad} \end{array}$$



b Two 4's are ____

$$\begin{array}{r} 4 + 4 = \underline{\quad} \\ 2 \times 4 = \underline{\quad} \quad \begin{array}{r} 4 \\ \times 2 \end{array} \quad \begin{array}{r} 2 \\ \times 4 \end{array} \\ 4 \times 2 = \underline{\quad} \end{array}$$



Two 5's are ____

$$\begin{array}{r} 5 + 5 = \underline{\quad} \\ 2 \times 5 = \underline{\quad} \quad \begin{array}{r} 5 \\ \times 2 \end{array} \quad \begin{array}{r} 2 \\ \times 5 \end{array} \\ 5 \times 2 = \underline{\quad} \end{array}$$



Two 6's are ____

$$\begin{array}{r} 6 + 6 = \underline{\quad} \\ 2 \times 6 = \underline{\quad} \quad \begin{array}{r} 6 \\ \times 2 \end{array} \quad \begin{array}{r} 2 \\ \times 6 \end{array} \\ 6 \times 2 = \underline{\quad} \end{array}$$



c Two 7's are ____

$$\begin{array}{r} 7 + 7 = \underline{\quad} \\ 2 \times 7 = \underline{\quad} \quad \begin{array}{r} 7 \\ \times 2 \end{array} \quad \begin{array}{r} 2 \\ \times 7 \end{array} \\ 7 \times 2 = \underline{\quad} \end{array}$$



Two 8's are ____

$$\begin{array}{r} 8 + 8 = \underline{\quad} \\ 2 \times 8 = \underline{\quad} \quad \begin{array}{r} 8 \\ \times 2 \end{array} \quad \begin{array}{r} 2 \\ \times 8 \end{array} \\ 8 \times 2 = \underline{\quad} \end{array}$$



Two 9's are ____

$$\begin{array}{r} 9 + 9 = \underline{\quad} \\ 2 \times 9 = \underline{\quad} \quad \begin{array}{r} 9 \\ \times 2 \end{array} \quad \begin{array}{r} 2 \\ \times 9 \end{array} \\ 9 \times 2 = \underline{\quad} \end{array}$$

4. This number line shows that 2×4 is the same as 4×2 : 

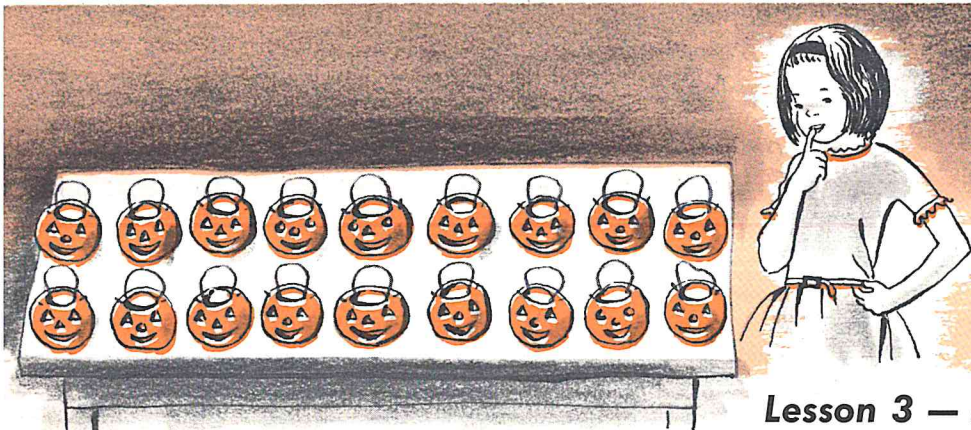
On this number line show that 2×3 is the same as 3×2 : 

Write the missing numbers:

5. a $2 \times 7 = 7 \times \underline{\quad}$ b $2 \times 8 = 8 \times \underline{\quad}$ c $2 \times 9 = 9 \times \underline{\quad}$

6. $2 \times 5 = 5 \times \underline{\quad}$ $2 \times 6 = 6 \times \underline{\quad}$ $2 \times 1 = 1 \times \underline{\quad}$

If you do not already know the multiplication facts for any number, study them on page 160. The answer in multiplication is called the **product**.



Lesson 3 — DIVIDING BY TWO

- Mae had 18 jack-o-lanterns to decorate tables for a Halloween party. She put 2 on each table. To find how many tables she decorated, draw a line around each group of 2 in the picture. This is dividing 18 into groups of 2 or dividing 18 by 2. How many 2's are in 18? _____

The division sign is \div and is read **divided by**. 18 divided by 2 may be written $18 \div 2$ or it may be written $2 \overline{)18}$.

To check the answer count the number of times you can subtract 2 if you start with 18.

You can also check the answer by multiplying: $2 \times 9 = 18$.

There are four ways to write the same thing: $2 \times 9 = 18$, $18 \div 2 = 9$, $\frac{9}{2} \overline{)18}$ and by subtracting.

$$\begin{array}{r} 18 \\ -2 \quad 1 \\ \hline 16 \\ -2 \quad 2 \\ \hline 14 \\ -2 \quad 3 \\ \hline 12 \\ -2 \quad 4 \\ \hline 10 \\ -2 \quad 5 \\ \hline 8 \\ -2 \quad 6 \\ \hline 6 \\ -2 \quad 7 \\ \hline 4 \\ -2 \quad 8 \\ \hline 2 \\ -2 \quad 9 \\ \hline 0 \end{array}$$

2 UNIT

Write the answers:

- How many 2's are in 4? _____ $2 \times \underline{\quad} = 4$ $4 \div 2 = \underline{\quad}$ $2 \overline{)4}$
- How many 2's are in 16? _____ $2 \times \underline{\quad} = 16$ $16 \div 2 = \underline{\quad}$ $2 \overline{)16}$
- How many 2's are in 2? _____ $2 \times \underline{\quad} = 2$ $2 \div 2 = \underline{\quad}$ $2 \overline{)2}$
- How many 2's are in 14? _____ $2 \times \underline{\quad} = 14$ $14 \div 2 = \underline{\quad}$ $2 \overline{)14}$
- How many 2's are in 6? _____ $2 \times \underline{\quad} = 6$ $6 \div 2 = \underline{\quad}$ $2 \overline{)6}$
- How many 2's are in 8? _____ $2 \times \underline{\quad} = 8$ $8 \div 2 = \underline{\quad}$ $2 \overline{)8}$
- How many 2's are in 12? _____ $2 \times \underline{\quad} = 12$ $12 \div 2 = \underline{\quad}$ $2 \overline{)12}$
- How many 2's are in 10? _____ $2 \times \underline{\quad} = 10$ $10 \div 2 = \underline{\quad}$ $2 \overline{)10}$

If you do not know the division facts for any number, study them on page 160. The answer in division is called the **quotient**.

Lesson 4 — MULTIPLYING BY THREE

Write the answers:

1. Three 1's are ____.

One 3 is ____.

$$1 + 1 + 1 = \underline{\quad}$$

$$3 \times 1 = \underline{\quad} \quad \begin{array}{r} 3 \\ \times 1 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ \times 3 \\ \hline \end{array}$$

$$1 \times 3 = \underline{\quad}$$

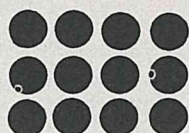


Three 4's are ____.

Four 3's are ____.

$$3 \times 4 = \underline{\quad} \quad \begin{array}{r} 4 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 4 \\ \hline \end{array}$$

$$4 \times 3 = \underline{\quad}$$

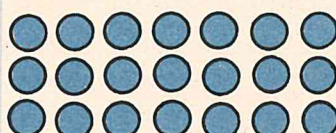


Three 7's are ____.

Seven 3's are ____.

$$3 \times 7 = \underline{\quad} \quad \begin{array}{r} 7 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 7 \\ \hline \end{array}$$

$$7 \times 3 = \underline{\quad}$$



2. Three 2's are ____.

Two 3's are ____.

$$2 + 2 + 2 = \underline{\quad}$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ \times 3 \\ \hline \end{array}$$

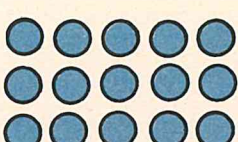


Three 5's are ____.

Five 3's are ____.

$$3 \times 5 = \underline{\quad} \quad \begin{array}{r} 5 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$$

$$5 \times 3 = \underline{\quad}$$

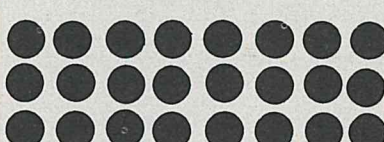


Three 8's are ____.

Eight 3's are ____.

$$3 \times 8 = \underline{\quad} \quad \begin{array}{r} 8 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 8 \\ \hline \end{array}$$

$$8 \times 3 = \underline{\quad}$$

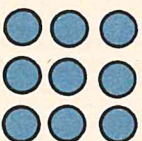


3. Three 3's are ____.

Three 3's are ____.

$$3 + 3 + 3 = \underline{\quad}$$

$$3 \times 3 = \underline{\quad} \quad \begin{array}{r} 3 \\ \times 3 \\ \hline \end{array}$$

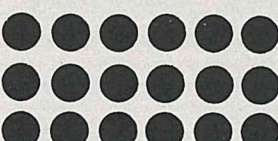


Three 6's are ____.

Six 3's are ____.

$$3 \times 6 = \underline{\quad} \quad \begin{array}{r} 6 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 6 \\ \hline \end{array}$$

$$6 \times 3 = \underline{\quad}$$

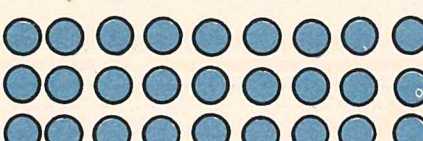


Three 9's are ____.

Nine 3's are ____.

$$3 \times 9 = \underline{\quad} \quad \begin{array}{r} 9 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 9 \\ \hline \end{array}$$

$$9 \times 3 = \underline{\quad}$$



This number line shows you that 3×2 is the same as 2×3 :



4. Write the missing numbers:

$$\begin{array}{llll} \text{a} & \text{b} & \text{c} & \text{d} \\ 3 \times 9 = 9 \times \underline{\quad} & 3 \times 7 = 7 \times \underline{\quad} & 3 \times 6 = 6 \times \underline{\quad} & 3 \times 5 = 5 \times \underline{\quad} \end{array}$$

5. Write the products:

$$\begin{array}{lllllllll} \text{a} & \text{b} & \text{c} & \text{d} & \text{e} & \text{f} & \text{g} & \text{h} & \text{i} \\ 1 & 9 & 2 & 8 & 3 & 7 & 4 & 6 & 5 \\ \times 3 & \times 3 & \times 3 & \times 3 & \times 3 & \times 3 & \times 3 & \times 3 & \times 3 \end{array}$$



Lesson 5 — DIVIDING BY THREE

1. Dick has 21 paper cats. He plans to put three on each window. To find how many windows he can decorate, draw a line around each group of three in the picture.

2 UNIT

How many 3's are in 21? $\underline{\quad} 21 \div 3 = \underline{\quad} 3 \overline{)21}$

Dick can decorate $\underline{\quad}$ windows.

Check by multiplying $3 \times \underline{\quad} = 21$

Check by subtracting 3's. Begin with 21. How many times can 3 be subtracted? $\underline{\quad}$

$$\begin{array}{r} 21 \\ -3 \\ \hline 18 \\ -3 \\ \hline 15 \\ -3 \\ \hline 12 \\ -3 \\ \hline 9 \\ -3 \\ \hline 6 \\ -3 \\ \hline 3 \\ -3 \\ \hline 0 \end{array} \begin{array}{l} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \end{array}$$

Write the answers:

2. How many 3's are in 12? $\underline{\quad} 3 \times \underline{\quad} = 12 \quad 12 \div 3 = \underline{\quad} \quad 3 \overline{)12}$
3. How many 3's are in 18? $\underline{\quad} 3 \times \underline{\quad} = 18 \quad 18 \div 3 = \underline{\quad} \quad 3 \overline{)18}$
4. How many 3's are in 9? $\underline{\quad} 3 \times \underline{\quad} = 9 \quad 9 \div 3 = \underline{\quad} \quad 3 \overline{)9}$
5. How many 3's are in 27? $\underline{\quad} 3 \times \underline{\quad} = 27 \quad 27 \div 3 = \underline{\quad} \quad 3 \overline{)27}$
6. How many 3's are in 6? $\underline{\quad} 3 \times \underline{\quad} = 6 \quad 6 \div 3 = \underline{\quad} \quad 3 \overline{)6}$
7. How many 3's are in 15? $\underline{\quad} 3 \times \underline{\quad} = 15 \quad 15 \div 3 = \underline{\quad} \quad 3 \overline{)15}$
8. How many 3's are in 3? $\underline{\quad} 3 \times \underline{\quad} = 3 \quad 3 \div 3 = \underline{\quad} \quad 3 \overline{)3}$
9. How many 3's are in 24? $\underline{\quad} 3 \times \underline{\quad} = 24 \quad 24 \div 3 = \underline{\quad} \quad 3 \overline{)24}$

Lesson 6 — MULTIPLYING BY FOUR

Write the answers:



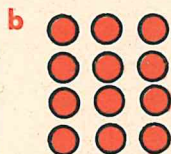
1. Four 2's are ____

$$2 + 2 + 2 + 2 = \underline{\quad}$$

Two 4's are ____

$$4 \times 2 = \underline{\quad} \quad \begin{array}{r} 2 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$$

$$2 \times 4 = \underline{\quad}$$

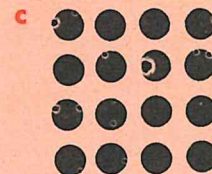


Do you see three 4's?

Do you see four 3's?

$$4 \times 3 = \underline{\quad} \quad \begin{array}{r} 3 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$$

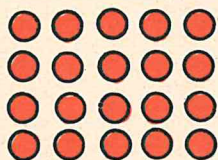
$$3 \times 4 = \underline{\quad}$$



How many 4's? ____

$$4 \times 4 = \underline{\quad} \quad \begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$$

$$4 \times 4 = \underline{\quad}$$

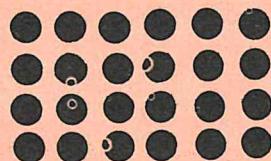


2. How many 4's? ____

How many 5's? ____

$$4 \times 5 = \underline{\quad} \quad \begin{array}{r} 5 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$$

$$5 \times 4 = \underline{\quad}$$

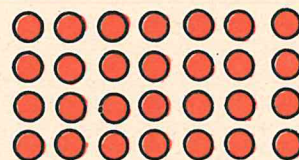


How many 4's? ____

How many 6's? ____

$$4 \times 6 = \underline{\quad} \quad \begin{array}{r} 6 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 6 \\ \hline \end{array}$$

$$6 \times 4 = \underline{\quad}$$

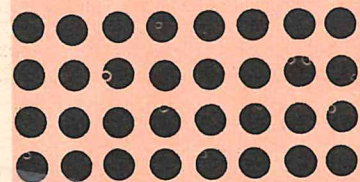


How many 7's? ____

How many 4's? ____

$$4 \times 7 = \underline{\quad} \quad \begin{array}{r} 7 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 7 \\ \hline \end{array}$$

$$7 \times 4 = \underline{\quad}$$



3. How many 4's? ____

How many 8's? ____

$$4 \times 8 = \underline{\quad} \quad \begin{array}{r} 8 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 8 \\ \hline \end{array}$$

$$8 \times 4 = \underline{\quad}$$

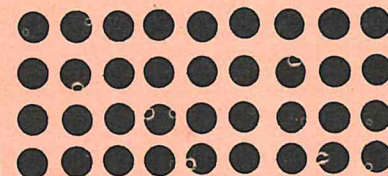


How many 4's? ____

How many 1's? ____

$$4 \times 1 = \underline{\quad} \quad \begin{array}{r} 1 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 1 \\ \hline \end{array}$$

$$1 \times 4 = \underline{\quad}$$



How many 4's? ____

How many 9's? ____

$$4 \times 9 = \underline{\quad} \quad \begin{array}{r} 9 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 9 \\ \hline \end{array}$$

$$9 \times 4 = \underline{\quad}$$

UNIT 2

You can see that two 4's is the same as four 2's:



4. Write the products:

a

$$\begin{array}{r} 2 \\ 4 \\ \hline \end{array}$$

b

$$\begin{array}{r} 6 \\ 4 \\ \hline \end{array}$$

c

$$\begin{array}{r} 3 \\ 4 \\ \hline \end{array}$$

d

$$\begin{array}{r} 1 \\ 4 \\ \hline \end{array}$$

e

$$\begin{array}{r} 8 \\ 4 \\ \hline \end{array}$$

f

$$\begin{array}{r} 5 \\ 4 \\ \hline \end{array}$$

g

$$\begin{array}{r} 7 \\ 4 \\ \hline \end{array}$$

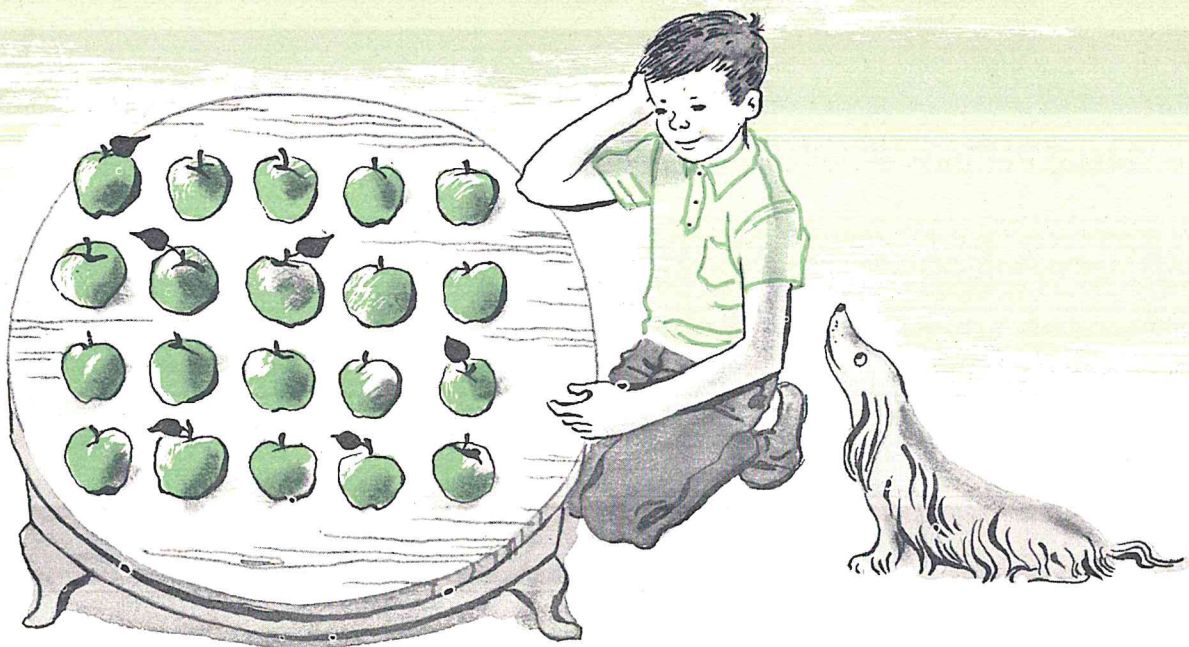
h

$$\begin{array}{r} 9 \\ 4 \\ \hline \end{array}$$

i

$$\begin{array}{r} 4 \\ 4 \\ \hline \end{array}$$

TOP SCORE: 59 MY SCORE: ____



Lesson 7 — DIVIDING BY FOUR

2 UNIT

1. Bob had 20 apples to give to his friends at the party. He gave each one 4 apples. To find how many friends, draw a ring around each group of four in the picture.

How many 4's are in 20? $\underline{\quad}$ $20 \div 4 = \underline{\quad}$ $4 \overline{)20}$

Bob gave apples to $\underline{\quad}$ friends. $4 \times \underline{\quad} = 20$

Begin with 20. How many times can 4 be subtracted? $\underline{\quad}$

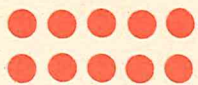
Write the answers:

$$\begin{array}{r} 20 \\ -4 \quad 1 \\ \hline 16 \\ -4 \quad 2 \\ \hline 12 \\ -4 \quad 3 \\ \hline 8 \\ -4 \quad 4 \\ \hline 4 \\ -4 \quad 5 \\ \hline 0 \end{array}$$

2. How many 4's are in 28? $\underline{\quad}$ $4 \times \underline{\quad} = 28$ $28 \div 4 = \underline{\quad}$ $4 \overline{)28}$
3. How many 4's are in 16? $\underline{\quad}$ $4 \times \underline{\quad} = 16$ $16 \div 4 = \underline{\quad}$ $4 \overline{)16}$
4. How many 4's are in 8? $\underline{\quad}$ $4 \times \underline{\quad} = 8$ $8 \div 4 = \underline{\quad}$ $4 \overline{)8}$
5. How many 4's are in 32? $\underline{\quad}$ $4 \times \underline{\quad} = 32$ $32 \div 4 = \underline{\quad}$ $4 \overline{)32}$
6. How many 4's are in 12? $\underline{\quad}$ $4 \times \underline{\quad} = 12$ $12 \div 4 = \underline{\quad}$ $4 \overline{)12}$
7. How many 4's are in 36? $\underline{\quad}$ $4 \times \underline{\quad} = 36$ $36 \div 4 = \underline{\quad}$ $4 \overline{)36}$
8. How many 4's are in 4? $\underline{\quad}$ $4 \times \underline{\quad} = 4$ $4 \div 4 = \underline{\quad}$ $4 \overline{)4}$
9. How many 4's are in 24? $\underline{\quad}$ $4 \times \underline{\quad} = 24$ $24 \div 4 = \underline{\quad}$ $4 \overline{)24}$

Lesson 8 — MULTIPLYING BY FIVE

Write the answers:

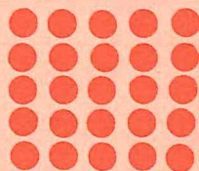


1. **a**
- Five 2's are ____ $\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$
- Two 5's are ____
- $5 \times 2 = \underline{\quad}$ $2 \times 5 = \underline{\quad}$



- b**
- How many 5's? ____ $\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$
- How many 3's? ____
- $5 \times 3 = \underline{\quad}$ $3 \times 5 = \underline{\quad}$

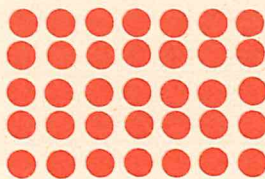
- 2.
-
- Do you see four 5's? $\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$
- Do you see five 4's?
- $5 \times 4 = \underline{\quad}$ $4 \times 5 = \underline{\quad}$



- How many 5's? ____ $\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$
- $5 \times 5 = \underline{\quad}$

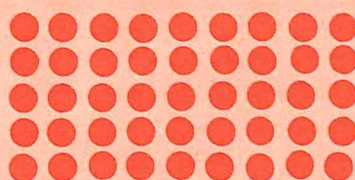
UNIT 2

- 3.
-
- How many 5's? ____ $\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$
- How many 6's? ____
- $5 \times 6 = \underline{\quad}$ $6 \times 5 = \underline{\quad}$



- How many 5's? ____ $\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$
- How many 7's? ____
- $5 \times 7 = \underline{\quad}$ $7 \times 5 = \underline{\quad}$

- 4.
-
- How many 5's? ____ $\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$
- How many 8's? ____
- $5 \times 8 = \underline{\quad}$ $8 \times 5 = \underline{\quad}$



- How many 5's? ____ $\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$
- How many 9's? ____
- $5 \times 9 = \underline{\quad}$ $9 \times 5 = \underline{\quad}$

5. Find the products:

a	b	c	d	e	f	g	h	i
$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$

TOP SCORE: 54 MY SCORE: _____



Lesson 9 — DIVIDING BY FIVE

1. Lucy made posters. She pasted 5 paper witches on each poster. She had 15 witches. To find out how many posters she made, draw a ring around each group of 5 in the picture. Lucy made _____ posters. How many 5's are there in 15? _____

$$5 \times \underline{\quad} = 15 \quad 15 \div 5 = \underline{\quad}$$

Begin with 15. How many times can 5 be subtracted? _____

$$\begin{array}{r} 15 \\ -5 \\ \hline 10 \\ -5 \\ \hline 5 \\ -5 \\ \hline 0 \end{array}$$

Write the answers:

- | | | | |
|----------------------------------|-----------------------------------|---------------------------------|--------------------|
| 2. How many 5's are in 10? _____ | $5 \times \underline{\quad} = 10$ | $10 \div 5 = \underline{\quad}$ | $5 \overline{)10}$ |
| 3. How many 5's are in 5? _____ | $5 \times \underline{\quad} = 5$ | $5 \div 5 = \underline{\quad}$ | $5 \overline{)5}$ |
| 4. How many 5's are in 40? _____ | $5 \times \underline{\quad} = 40$ | $40 \div 5 = \underline{\quad}$ | $5 \overline{)40}$ |
| 5. How many 5's are in 35? _____ | $5 \times \underline{\quad} = 35$ | $35 \div 5 = \underline{\quad}$ | $5 \overline{)35}$ |
| 6. How many 5's are in 20? _____ | $5 \times \underline{\quad} = 20$ | $20 \div 5 = \underline{\quad}$ | $5 \overline{)20}$ |
| 7. How many 5's are in 45? _____ | $5 \times \underline{\quad} = 45$ | $45 \div 5 = \underline{\quad}$ | $5 \overline{)45}$ |
| 8. How many 5's are in 30? _____ | $5 \times \underline{\quad} = 30$ | $30 \div 5 = \underline{\quad}$ | $5 \overline{)30}$ |
| 9. How many 5's are in 25? _____ | $5 \times \underline{\quad} = 25$ | $25 \div 5 = \underline{\quad}$ | $5 \overline{)25}$ |

10. Find the quotients:

a b c d e f g h i

$5 \overline{)15}$	$5 \overline{)5}$	$5 \overline{)20}$	$5 \overline{)45}$	$5 \overline{)25}$	$5 \overline{)40}$	$5 \overline{)30}$	$5 \overline{)10}$	$5 \overline{)35}$
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Lesson 10 — MULTIPLYING BY SIX

Write the answers:

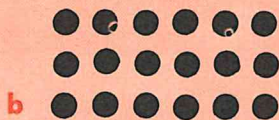


1. Two 6's are ____

Six 2's are ____

$$6 \times 2 = \underline{\quad} \quad \begin{array}{r} 2 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$$

$$2 \times 6 = \underline{\quad}$$

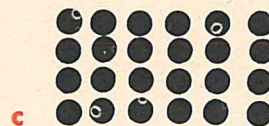


Do you see three 6's? ____

Do you see six 3's? ____

$$6 \times 3 = \underline{\quad} \quad \begin{array}{r} 3 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$$

$$3 \times 6 = \underline{\quad}$$

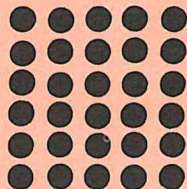


How many 6's? ____

How many 4's? ____

$$6 \times 4 = \underline{\quad} \quad \begin{array}{r} 4 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$$

$$4 \times 6 = \underline{\quad}$$

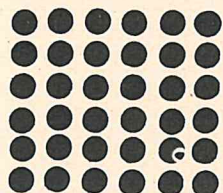


2. How many 6's? ____

How many 5's? ____

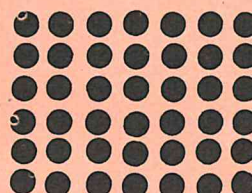
$$6 \times 5 = \underline{\quad} \quad \begin{array}{r} 5 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$$

$$5 \times 6 = \underline{\quad}$$



How many 6's? ____

$$6 \times 6 = \underline{\quad} \quad \begin{array}{r} 6 \\ \times 6 \\ \hline \end{array}$$

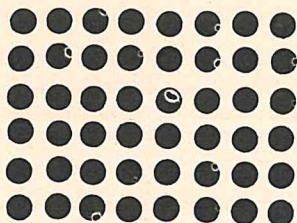


How many 6's? ____

How many 7's? ____

$$6 \times 7 = \underline{\quad} \quad \begin{array}{r} 7 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 7 \\ \hline \end{array}$$

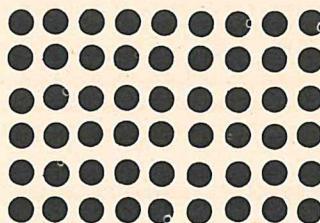
$$7 \times 6 = \underline{\quad}$$



3. How many 6's? ____ $\begin{array}{r} 8 \\ \times 6 \\ \hline \end{array}$ $\begin{array}{r} 6 \\ \times 8 \\ \hline \end{array}$

How many 8's? ____

$$6 \times 8 = \underline{\quad} \quad 8 \times 6 = \underline{\quad}$$



How many 6's? ____ $\begin{array}{r} 9 \\ \times 6 \\ \hline \end{array}$ $\begin{array}{r} 6 \\ \times 9 \\ \hline \end{array}$

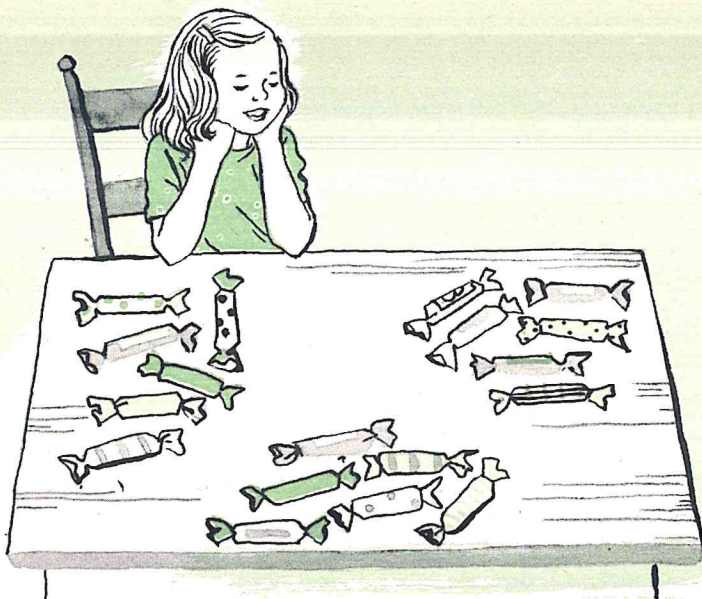
How many 9's? ____

$$6 \times 9 = \underline{\quad} \quad 9 \times 6 = \underline{\quad}$$

4. Write the products:

a	b	c	d	e	f	g	h	i
5	8	3	1	2	7	4	6	9
<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>

UNIT 2



Lesson 11 — DIVIDING BY SIX

1. Ann had 18 party favors. She put 6 on each table. To find the number of tables draw a line around each group of 6 in the picture.

How many 6's are there in 18? ____

$$\begin{array}{r} 18 \\ -6 \\ \hline 12 \\ -6 \\ \hline 6 \\ -6 \\ \hline 0 \end{array}$$

2 UNIT

$$6 \times \underline{\quad} = 18. \quad 18 \div 6 = \underline{\quad} \quad 6 \overline{)18}$$

Check your answer by subtracting 6's. Begin with 18.

How many times can 6 be subtracted? ____

2. How many 6's are in 12? ____ $6 \times \underline{\quad} = 12$ $12 \div 6 = \underline{\quad}$ $6 \overline{)12}$

3. How many 6's are in 24? ____ $6 \times \underline{\quad} = 24$ $24 \div 6 = \underline{\quad}$ $6 \overline{)24}$

4. How many 6's are in 30? ____ $6 \times \underline{\quad} = 30$ $30 \div 6 = \underline{\quad}$ $6 \overline{)30}$

5. How many 6's are in 6? ____ $6 \times \underline{\quad} = 6$ $6 \div 6 = \underline{\quad}$ $6 \overline{)6}$

6. How many 6's are in 48? ____ $6 \times \underline{\quad} = 48$ $48 \div 6 = \underline{\quad}$ $6 \overline{)48}$

7. How many 6's are in 36? ____ $6 \times \underline{\quad} = 36$ $36 \div 6 = \underline{\quad}$ $6 \overline{)36}$

8. How many 6's are in 54? ____ $6 \times \underline{\quad} = 54$ $54 \div 6 = \underline{\quad}$ $6 \overline{)54}$

9. How many 6's are in 42? ____ $6 \times \underline{\quad} = 42$ $42 \div 6 = \underline{\quad}$ $6 \overline{)42}$

10. Find the quotients:

a

b

c

d

e

f

g

h

i

$$6 \overline{)12}$$

$$6 \overline{)6}$$

$$6 \overline{)30}$$

$$6 \overline{)48}$$

$$6 \overline{)24}$$

$$6 \overline{)18}$$

$$6 \overline{)42}$$

$$6 \overline{)54}$$

$$6 \overline{)36}$$

Lesson 12 — MULTIPLYING BY SEVEN

The boys and girls in Jean's class packed 7 boxes of school supplies to send overseas. In each of the 7 boxes they put 2 notebooks, 3 tablets, 4 erasers, and 5 pencils.

1. How many notebooks were in the 7 boxes? ____

Do you see seven 2's? $7 \times 2 =$ ____

Do you see two 7's? $2 \times 7 =$ ____

$2 + 2 + 2 + 2 + 2 + 2 + 2 =$ ____

$7 + 7 =$ ____ Two 7's are ____.

Seven 2's are ____.

$$\begin{array}{r} 2 \quad 7 \\ \times 7 \quad \times 2 \\ \hline \end{array}$$


3. How many erasers were in the 7 boxes? ____

How many 4's are there? ____

How many 7's are there? ____

$4 + 4 + 4 + 4 + 4 + 4 + 4 =$ ____

$7 + 7 + 7 + 7 =$ ____

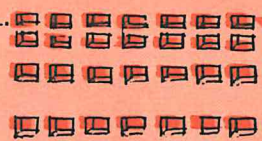
$$\begin{array}{r} 4 \quad 7 \\ \times 7 \quad \times 4 \\ \hline \end{array}$$

Seven 4's are ____.

Four 7's are ____.

$7 \times 4 =$ ____

$4 \times 7 =$ ____



UNIT 2

2. How many tablets were in the 7 boxes? ____

How many 3's are there? ____

How many 7's are there? ____

$3 + 3 + 3 + 3 + 3 + 3 + 3 =$ ____

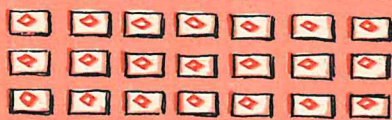
$7 + 7 + 7 =$ ____

Seven 3's are ____.

$$\begin{array}{r} 3 \quad 7 \\ \times 7 \quad \times 3 \\ \hline \end{array}$$

Three 7's are ____.

$7 \times 3 =$ ____ $3 \times 7 =$ ____



4. How many pencils were in the 7 boxes? ____

How many 5's? ____ $7 \times 5 =$ ____

How many 7's? ____ $5 \times 7 =$ ____

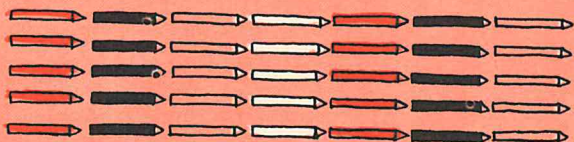
$5 + 5 + 5 + 5 + 5 + 5 + 5 =$ ____

$7 + 7 + 7 + 7 + 7 =$ ____

Seven 5's are ____.

$$\begin{array}{r} 5 \quad 7 \\ \times 7 \quad \times 5 \\ \hline \end{array}$$

Five 7's are ____.



Write a multiplication fact for each addition problem:

a $5. 7 + 7 = 14$ ____

6. $7 + 7 + 7 + 7 + 7 = 35$ ____

7. $7 + 7 + 7 + 7 = 28$ ____

b $2 + 2 + 2 + 2 + 2 + 2 + 2 = 14$ ____

$5 + 5 + 5 + 5 + 5 + 5 + 5 = 35$ ____

$4 + 4 + 4 + 4 + 4 + 4 + 4 = 28$ ____

TOP SCORE: 48 MY SCORE: ____



Lesson 13 — MORE MULTIPLYING BY SEVEN

The class made up 7 packages of art supplies to send to the same schools. In each package they put 6 brushes, 7 jars of paint, 8 crayons, and 9 sheets of colored paper.

1. How many brushes were in the

7 packages? $\underline{\quad\quad\quad} \begin{array}{r} 6 \\ \times 7 \\ \hline \end{array}$

How many 6's? $\underline{\quad\quad\quad} \begin{array}{r} 6 \\ \times 7 \\ \hline \end{array}$

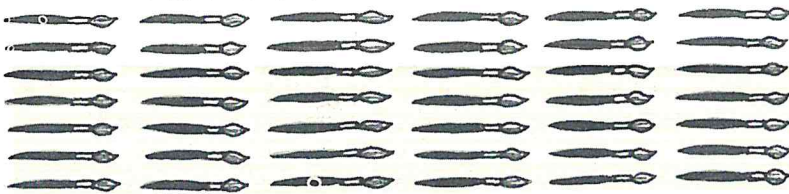
How many 7's? $\underline{\quad\quad\quad}$

$6 + 6 + 6 + 6 + 6 + 6 + 6 = \underline{\quad\quad\quad}$

$7 + 7 + 7 + 7 + 7 + 7 + 7 = \underline{\quad\quad\quad}$

Seven 6's are $\underline{\quad\quad\quad}$. $7 \times 6 = \underline{\quad\quad\quad}$

Six 7's are $\underline{\quad\quad\quad}$. $6 \times 7 = \underline{\quad\quad\quad}$



2. How many crayons were

in the 7 packages? $\underline{\quad\quad\quad} \begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$

How many 8's? $\underline{\quad\quad\quad} \begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$

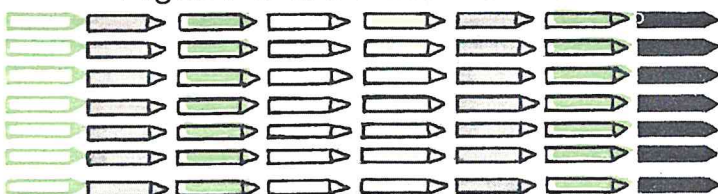
How many 7's? $\underline{\quad\quad\quad}$

Seven 8's are $\underline{\quad\quad\quad}$. $7 \times 8 = \underline{\quad\quad\quad}$

$8 + 8 + 8 + 8 + 8 + 8 + 8 = \underline{\quad\quad\quad}$

$7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = \underline{\quad\quad\quad}$

Eight 7's are $\underline{\quad\quad\quad}$. $8 \times 7 = \underline{\quad\quad\quad}$



Write the products:

- | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|
| a | b | c | d | e | f | g | h | i |
| 5. $\begin{array}{r} 4 \\ \times 7 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ \times 7 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ \times 7 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ \times 7 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ \times 7 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ \times 7 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$ | $\begin{array}{r} 1 \\ \times 7 \\ \hline \end{array}$ |

3. How many jars of paint

were there? $\underline{\quad\quad\quad}$

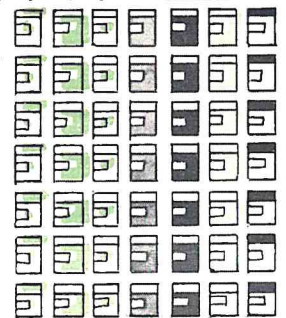
How many 7's? $\underline{\quad\quad\quad}$

$7 + 7 + 7 + 7 + 7 + 7 + 7 = \underline{\quad\quad\quad}$

Seven 7's are $\underline{\quad\quad\quad}$.

$7 \times 7 = \underline{\quad\quad\quad}$

$$\begin{array}{r} 7 \\ \times 7 \\ \hline \end{array}$$



4. How many sheets of colored

paper were there? $\underline{\quad\quad\quad} \begin{array}{r} 9 \\ \times 7 \\ \hline \end{array}$

How many 9's? $\underline{\quad\quad\quad} \begin{array}{r} 9 \\ \times 7 \\ \hline \end{array}$

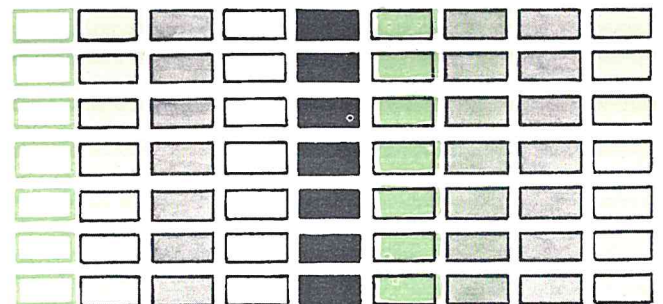
How many 7's? $\underline{\quad\quad\quad}$

$9 + 9 + 9 + 9 + 9 + 9 + 9 = \underline{\quad\quad\quad}$

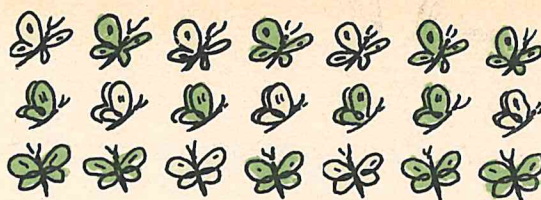
$7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = \underline{\quad\quad\quad}$

Seven 9's are $\underline{\quad\quad\quad}$. $7 \times 9 = \underline{\quad\quad\quad}$

Nine 7's are $\underline{\quad\quad\quad}$. $9 \times 7 = \underline{\quad\quad\quad}$



Lesson 14 — DIVIDING BY SEVEN



In each of the 7 boxes that were sent to a school overseas, the boys and girls put some colored stickers for fun. They had 21 butterflies, 35 stars, 14 birds, 7 flowers, and 28 triangles.

1. How many butterflies went into each of the 7 boxes? _____

Draw a line around each group of 7 butterflies to show how many were in each box:

How many 7's are in 21? _____

$$21 \div 7 = \underline{\quad} \quad 7 \times \underline{\quad} = 21 \quad 7 \overline{)21}$$

Check your answer by subtracting 7's.

Begin with 21. Seven can be subtracted _____ times.

$$\begin{array}{r} 21 \\ - 7 \\ \hline 14 \\ - 7 \\ \hline 7 \\ - 7 \\ \hline 0 \end{array} \begin{array}{l} 1 \\ 2 \\ 3 \end{array}$$

2. There were _____ stars in each box.

Draw a line around each group of 7 stars:

How many 7's are in 35? _____

$$35 \div 7 = \underline{\quad} \quad 7 \times \underline{\quad} = 35 \quad 7 \overline{)35}$$



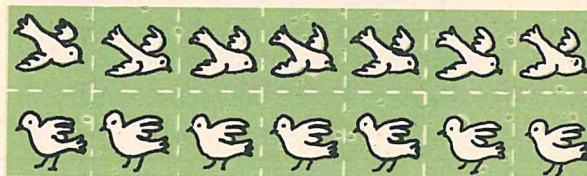
UNIT 2

3. How many bird stickers did they have for each box? _____

Draw a line around each group of 7 birds:

How many 7's are in 14? _____

$$14 \div 7 = \underline{\quad} \quad 7 \times \underline{\quad} = 14 \quad 7 \overline{)14}$$



4. How many flower stickers were put into each box? _____

Draw a line around each group of 7 flowers:

How many 7's are in 7? _____

$$7 \div 7 = \underline{\quad} \quad 7 \times \underline{\quad} = 7 \quad 7 \overline{)7}$$



5. How many triangle stickers went into each of the 7 boxes? _____

Draw a line around the triangles to show how many stickers went into each of 7 boxes:

How many 7's are in 28? _____

$$28 \div 7 = \underline{\quad} \quad 7 \times \underline{\quad} = 28 \quad 7 \overline{)28}$$



6. Write the quotients:

$$28 \div 7 = \underline{\quad} \quad 21 \div 7 = \underline{\quad}$$

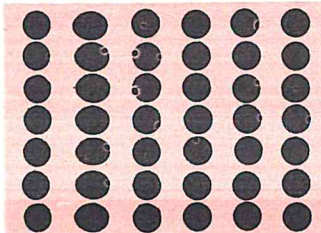
7. Write the missing numbers:

$$7 \times \underline{\quad} = 7 \quad 7 \times \underline{\quad} = 14$$

TOP SCORE: 35 MY SCORE: _____

Lesson 15 — DIVIDING BY SEVEN

1. Mary counted 42 days until her birthday. There are 7 days in a week. How many weeks until Mary's birthday? _____

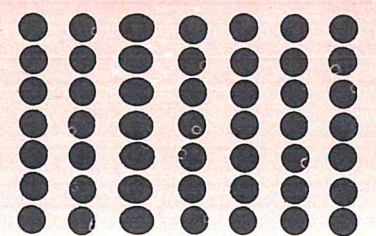


Draw a line around each group of seven dots:

How many 7's are in 42? _____

$$7 \times \underline{\quad} = 42 \quad 42 \div 7 = \underline{\quad} \quad 7 \overline{)42}$$

2. John's birthday will come in 49 days. How many weeks is this? _____



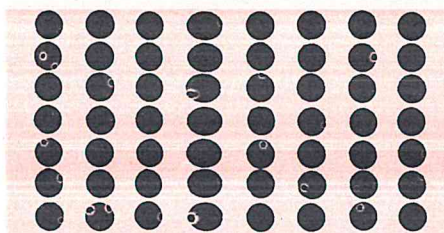
Draw a line around each group of seven dots:

How many 7's are in 49? _____

$$7 \times \underline{\quad} = 49 \quad 49 \div 7 = \underline{\quad} \quad 7 \overline{)49}$$

2 UNIT

3. Joe's birthday was 56 days ago. How many weeks was this? _____

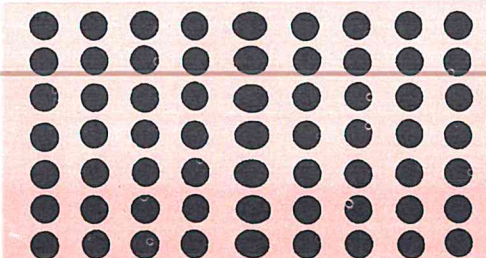


Draw a line around each group of seven dots:

How many 7's are in 56? _____

$$7 \times \underline{\quad} = 56 \quad 56 \div 7 = \underline{\quad} \quad 7 \overline{)56}$$

4. Jane's birthday was 63 days ago. How many weeks was this? _____



Draw a line around each group of seven dots:

How many 7's are in 63? _____

$$7 \times \underline{\quad} = 63 \quad 63 \div 7 = \underline{\quad} \quad 7 \overline{)63}$$

Write the missing numbers:

a

b

c

d

5. $42 \div 7 = \underline{\quad}$ $63 \div 7 = \underline{\quad}$ $49 \div 7 = \underline{\quad}$ $56 \div 7 = \underline{\quad}$

6. $7 \overline{)56}$ $7 \overline{)49}$ $7 \overline{)42}$ $7 \overline{)63}$

7. $7 \times \underline{\quad} = 35$ $7 \times \underline{\quad} = 56$ $7 \times \underline{\quad} = 63$ $7 \times \underline{\quad} = 42$

A number is divided evenly when nothing is left over.

Draw a ring around each number which can be divided evenly by 7:

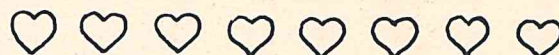
8. 49 17 24 21 7 30 48 35 45 63 27 56 28 54 14 32 42 66

Lesson 16 — MULTIPLYING BY EIGHT

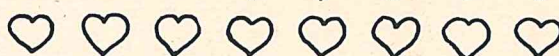


1. Louise cut out 2 large hearts for decoration. Ann cut 8 times as many. How many hearts did Ann cut? _____ Count the hearts.

How many 2's are there? _____



How many 8's are there? _____



Eight 2's are _____. $8 \times 2 = \underline{\quad}$ Two 8's are _____. $2 \times 8 = \underline{\quad}$

Find 2×8 on the number line. Then find 8×2 on the number line:



Does 2×8 have the same answer as 8×2 ? _____

2. Sue cut 8 times as many hearts as Mary cut. If Mary cut out 3 hearts, how many hearts did Sue cut? _____ Count the hearts.

How many 3's are there? _____



How many 8's are there? _____



Eight 3's are _____. $8 \times 3 = \underline{\quad}$ Three 8's are _____. $3 \times 8 = \underline{\quad}$

3. Kay cut four hearts. She plans to make 8 times as many. How many does she plan to make? _____



How many 4's are there? _____

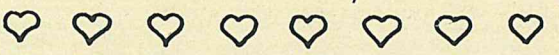


How many 8's are there? _____

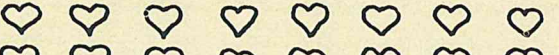


Eight 4's are _____. $8 \times 4 = \underline{\quad}$ Four 8's are _____. $4 \times 8 = \underline{\quad}$

4. Jean's little sister cut 5 hearts. Jean cut 8 times as many. How many hearts did Jean cut? _____



How many 5's are there? _____



How many 8's are there? _____



Eight 5's are _____. $8 \times 5 = \underline{\quad}$ Five 8's are _____. $5 \times 8 = \underline{\quad}$

5. Find the products:

a	b	c	d	e	f	g	h	i	j
2	1	4	5	3	8	8	8	8	8
<u>8</u>	<u>8</u>	<u>8</u>	<u>8</u>	<u>8</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>5</u>	<u>2</u>

Lesson 17 — MORE MULTIPLYING BY EIGHT

1. The boys put up the decorations the girls had made. Bob strung rows of hearts on strings. He put 6 on each string. He made 8 strings.



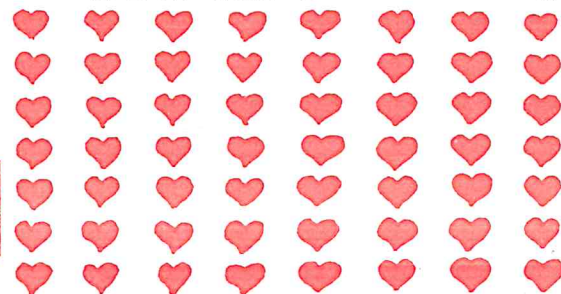
How many hearts did he use? ____

How many 6's do you see? ____ $8 \times 6 =$ ____

How many 8's do you see? ____ $6 \times 8 =$ ____

Eight 6's are ____ Six 8's are ____

2. Don also made 8 strings, but he put 7 on each string.



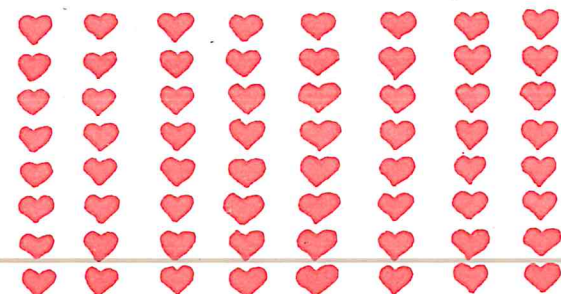
How many hearts did Don string? ____

How many 7's are there? ____ $7 \times 8 =$ ____

How many 8's are there? ____ $8 \times 7 =$ ____

Eight 7's are ____ Seven 8's are ____

3. Bill made 8 strings for decorating. He put 8 hearts on each string.

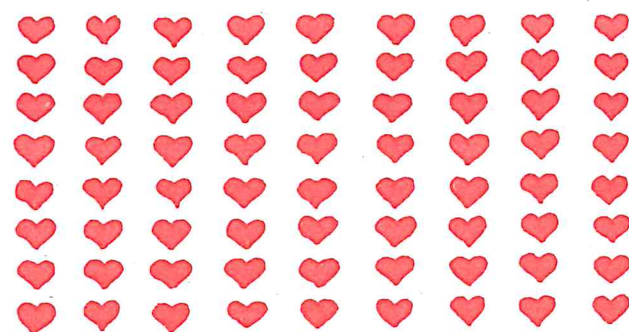


How many hearts did Bill string? ____

How many 8's are there? ____

Eight 8's are ____ $8 \times 8 =$ ____

4. There were 8 windows in the room. Jim and Al stuck 9 hearts on each.



How many hearts did they use? ____

How many 9's are there? ____

How many 8's are there? ____

Eight 9's are ____ Nine 8's are ____

$8 \times 9 =$ ____ $9 \times 8 =$ ____

Find the products:

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
5.	5	8	2	8	7	8	9	8	1	8	6	4	8	8	8	3
	8	6	8	2	8	7	8	3	8	5	8	8	9	8	4	8



Lesson 18 — DIVIDING BY EIGHT

1. There are 24 boys and girls in Miss Johnson's fourth-grade room. They formed groups to play party games. If there were 8 boys and girls in each group, how many groups were there? _____

Draw a line around each group of 8 children to find the number of 8's in 24:

How many 8's are in 24? _____

$$24 \div 8 = \underline{\quad} \quad 8 \times \underline{\quad} = 24 \quad 8 \overline{)24}$$

Check by subtracting 8's. Begin with 24. You can subtract 8 _____ times.

$$\begin{array}{r} 24 \\ -8 \text{ 1} \\ \hline 16 \\ -8 \text{ 2} \\ \hline 8 \\ -8 \text{ 3} \\ \hline 0 \end{array}$$

UNIT 2

2. How many stars are there? _____

How many 8's are in 16? _____

$$16 \div 8 = \underline{\quad} \quad 8 \times \underline{\quad} = 16 \quad 8 \overline{)16}$$

Draw a line around each group of 8 stars:



3. How many stars are there? _____

How many 8's are in 40? _____

$$40 \div 8 = \underline{\quad} \quad 8 \times \underline{\quad} = 40 \quad 8 \overline{)40}$$

Draw a line around each group of 8:



4. How many stars are there? _____

How many 8's are in 32? _____

$$32 \div 8 = \underline{\quad} \quad 8 \times \underline{\quad} = 32 \quad 8 \overline{)32}$$

Draw around the stars to show groups of 8:



5. How many stars are there? _____

How many 8's are in 8? _____

$$8 \div 8 = \underline{\quad} \quad 8 \times \underline{\quad} = 8 \quad 8 \overline{)8}$$

Draw a line around each group of 8:



Write the answers:

a

b

c

d

6. $8 \times \underline{\quad} = 24$

$8 \times \underline{\quad} = 40$

$32 \div 8 = \underline{\quad}$

$8 \times \underline{\quad} = 32$

7. $8 \times \underline{\quad} = 16$

$24 \div 8 = \underline{\quad}$

$40 \div 8 = \underline{\quad}$

$16 \div 8 = \underline{\quad}$

Lesson 19 — MORE DIVIDING BY EIGHT

1. Draw a line around each group of 8 stars:



How many stars are there? ____

How many 8's are in 48? ____

$$48 \div 8 = \underline{\quad} \quad 8 \times \underline{\quad} = 48 \quad 8 \overline{)48}$$

2. Draw a line around each group of 8 stars:



How many stars are there? ____

How many 8's are in 64? ____

$$64 \div 8 = \underline{\quad} \quad 8 \times \underline{\quad} = 64 \quad 8 \overline{)64}$$

2 UNIT

3. Draw a line around each group of 8 stars:



How many stars are there? ____

How many 8's are in 72? ____

$$72 \div 8 = \underline{\quad} \quad 8 \times \underline{\quad} = 72 \quad 8 \overline{)72}$$

4. Draw a line around each group of 8 stars:



How many stars are there? ____

How many 8's are in 56? ____

$$56 \div 8 = \underline{\quad} \quad 8 \times \underline{\quad} = 56 \quad 8 \overline{)56}$$

Write the answers:

5. How many 8's in 72? ____ $8 \times \underline{\quad} = 72$ $72 \div 8 = \underline{\quad}$ $8 \overline{)72}$

6. How many 8's in 48? ____ $8 \times \underline{\quad} = 48$ $48 \div 8 = \underline{\quad}$ $8 \overline{)48}$

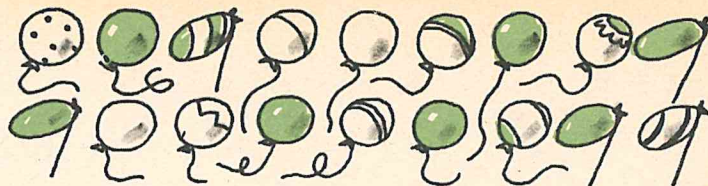
7. How many 8's in 64? ____ $8 \times \underline{\quad} = 64$ $64 \div 8 = \underline{\quad}$ $8 \overline{)64}$

8. How many 8's in 56? ____ $8 \times \underline{\quad} = 56$ $56 \div 8 = \underline{\quad}$ $8 \overline{)56}$

9. Draw a line around each number which can be divided evenly by 8:

44 18 8 64 28 45 24 36 48 56 72 25 32 27 54 63 16 42

Lesson 20 — MULTIPLYING BY NINE



1. Lucy invited 9 guests to a party. She planned to give each guest 2 balloons. How many balloons did she buy? _____

How many 2's do you see? _____ Nine 2's are _____. $9 \times 2 = \underline{\quad}$ $\begin{array}{r} 2 \\ \times 9 \\ \hline \end{array}$

How many 9's do you see? _____ Two 9's are _____. $2 \times 9 = \underline{\quad}$ $\begin{array}{r} 9 \\ \times 2 \\ \hline \end{array}$

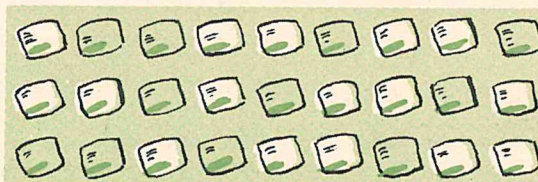
On the number line show that 2×9 is the same as 9×2 :

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

2. Lucy filled little paper baskets with candy and nuts to put at each guest's place. Into each of the 9 baskets she put 3 candy mints. How many mints were there? _____

How many 3's do you see? _____ 3 9

How many 9's do you see? _____ $\times 9$ $\times 3$



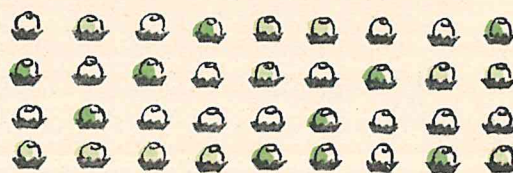
Three 9's are _____. Nine 3's are _____. $9 \times 3 = \underline{\quad}$ $3 \times 9 = \underline{\quad}$

3. Lucy put 4 pieces of candy into each of the 9 baskets. How many pieces of candy did she need? _____ 4 9

How many 4's do you see? _____ $\times 9$ $\times 4$

How many 9's do you see? _____

Nine 4's are _____. Four 9's are _____. $9 \times 4 = \underline{\quad}$ $4 \times 9 = \underline{\quad}$

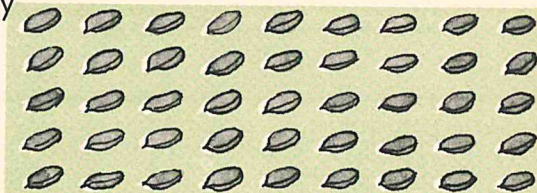


4. Lucy put 5 nuts into each basket. How many nuts did she need for the 9 baskets? _____

How many 5's do you see? _____ 5 9

How many 9's do you see? _____ $\times 9$ $\times 5$

Nine 5's are _____. Five 9's are _____. $9 \times 5 = \underline{\quad}$ $5 \times 9 = \underline{\quad}$

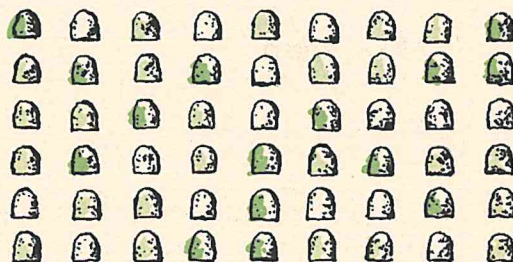


5. She put 6 gumdrops into each basket. How many gumdrops were in 9 baskets? _____

Do you see nine 6's? 6 9 $9 \times 6 = \underline{\quad}$

Do you see six 9's? $\times 9$ $\times 6$ $6 \times 9 = \underline{\quad}$

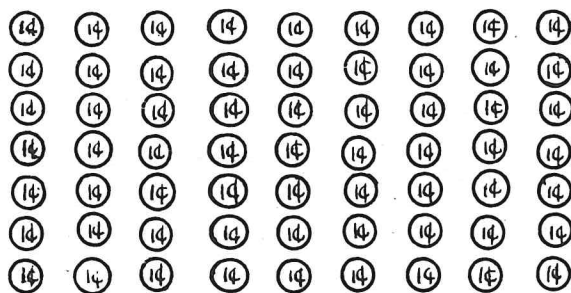
Nine 6's are _____. Six 9's are _____.





Lesson 21 — MORE MULTIPLYING BY NINE

1. Lucy had saved pennies to buy extra treats for her party. She spent 7 of her pennies for a pretty cupcake for each guest. How many pennies were 9 cupcakes? _____



Do you see nine 7's?

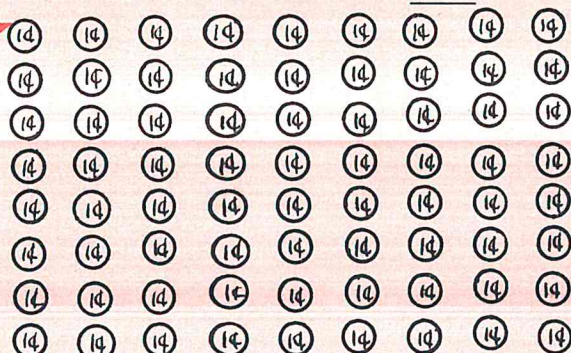
Do you see seven 9's? $\begin{array}{r} 7 \\ \times 9 \\ \hline \end{array}$ $\begin{array}{r} 9 \\ \times 7 \\ \hline \end{array}$

Nine 7's are _____.

Seven 9's are _____.

$9 \times 7 = \underline{\hspace{2cm}}$ $7 \times 9 = \underline{\hspace{2cm}}$

2. Favors took 8 of her pennies for each one. How many pennies did she use for 9 favors? _____



Do you see nine 8's?

Do you see eight 9's? $\begin{array}{r} 8 \\ \times 9 \\ \hline \end{array}$ $\begin{array}{r} 9 \\ \times 8 \\ \hline \end{array}$

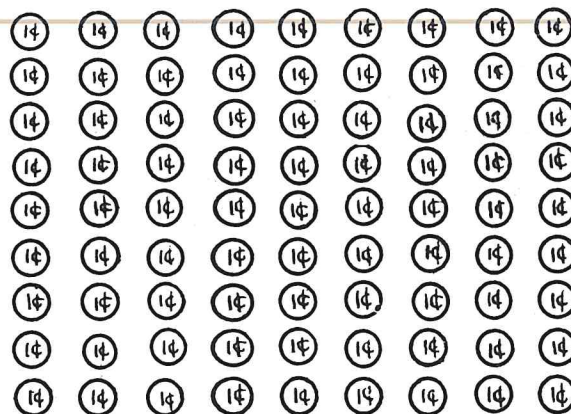
Nine 8's are _____.

Eight 9's are _____.

$9 \times 8 = \underline{\hspace{2cm}}$ $8 \times 9 = \underline{\hspace{2cm}}$



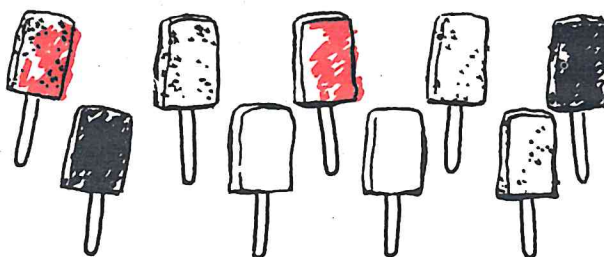
3. Ice-cream bars were 9 pennies each. How many pennies did Lucy spend for 9 ice-cream bars? _____



Do you see nine 9's?

Nine 9's are _____.

$9 \times 9 = \underline{\hspace{2cm}}$



4. Find the products:

a	b	c	d	e	f	g	h	i
1	9	9	8	9	7	6	9	4
9	9	5	9	2	9	9	3	9

Lesson 22 — DIVIDING BY NINE

1. In the school auditorium there are nine seats in each row.

Draw a line around each group of 9 to show how many rows of seats are needed for 18 visitors:

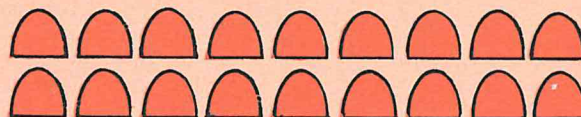
How many 9's in 18? $\underline{\hspace{1cm}}$ $9 \overline{)18}$

$18 \div 9 = \underline{\hspace{1cm}}$ $9 \times \underline{\hspace{1cm}} = 18$

18 visitors need $\underline{\hspace{1cm}}$ rows of 9 seats each.

Check by subtracting 9's:

Begin with 18. Nine can be subtracted $\underline{\hspace{1cm}}$ times.



$$\begin{array}{r} 18 \\ -9 \quad 1 \\ \hline 9 \\ -9 \quad 2 \\ \hline 0 \end{array}$$

2. The kindergarten class needs 27 seats. There are 9 seats in a row.

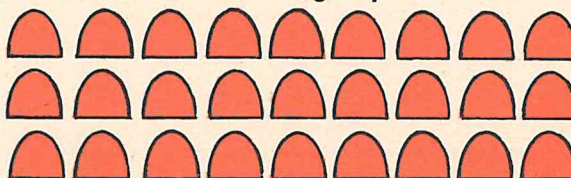
How many rows do they need? $\underline{\hspace{1cm}}$

Draw a line around each group of 9:

How many 9's in 27? $\underline{\hspace{1cm}}$

$27 \div 9 = \underline{\hspace{1cm}}$ $9 \times \underline{\hspace{1cm}} = 27$ $9 \overline{)27}$

Check your answer by subtracting:



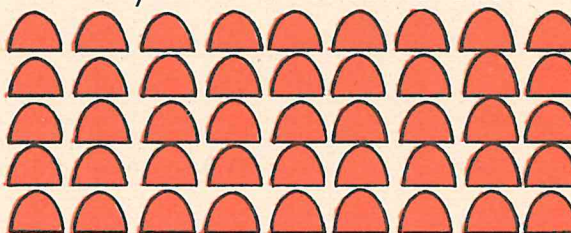
UNIT 2

3. There are 45 first-grade children. Find how many rows of 9 seats each they need. **Draw a line around each group of 9:**

How many 9's in 45? $\underline{\hspace{1cm}}$

$45 \div 9 = \underline{\hspace{1cm}}$ $9 \times \underline{\hspace{1cm}} = 45$ $9 \overline{)45}$

$\underline{\hspace{1cm}}$ rows are needed for 45 children.



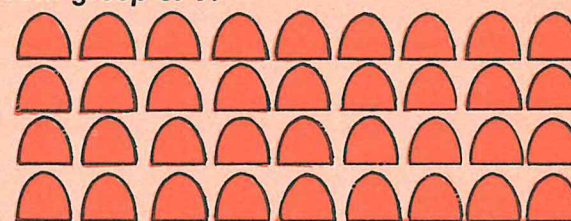
4. Find how many rows of 9 seats each it will take to seat the 36 second-grade children. **Draw a line around each group of 9:**

How many 9's in 36? $\underline{\hspace{1cm}}$

$36 \div 9 = \underline{\hspace{1cm}}$ $9 \times \underline{\hspace{1cm}} = 36$ $9 \overline{)36}$

It will take $\underline{\hspace{1cm}}$ rows for 36 children.

Check your answer by subtracting:

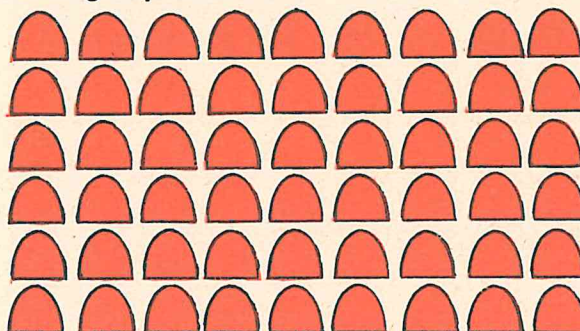


5. There are 54 fifth-grade children. How many rows of 9 seats each do they need? **Draw a line around each group of 9:**

How many 9's are in 54? $\underline{\hspace{1cm}}$

$54 \div 9 = \underline{\hspace{1cm}}$

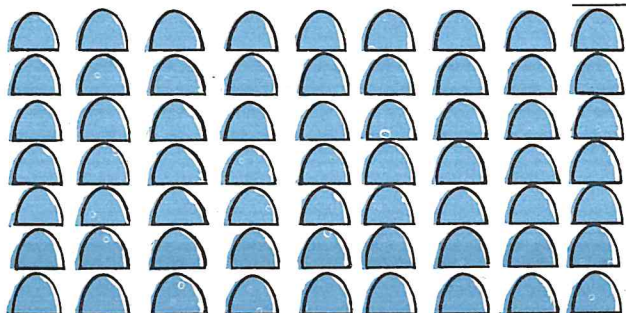
$9 \times \underline{\hspace{1cm}} = 54$ $9 \overline{)54}$



TOP SCORE: 33 MY SCORE: $\underline{\hspace{2cm}}$

Lesson 23 — MORE DIVIDING BY NINE

1. There are 63 fourth-grade children. How many rows of seats with 9 in a row are needed for them? _____



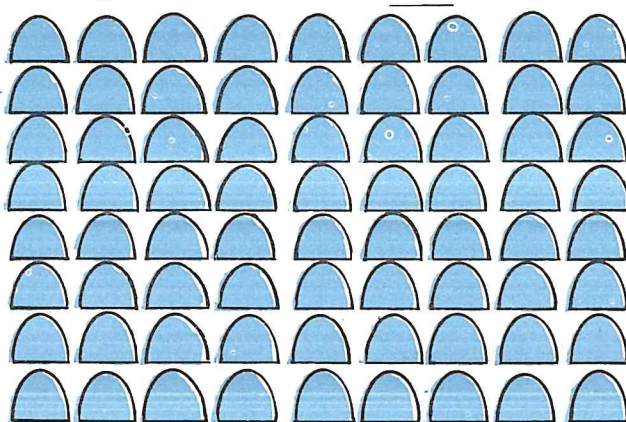
Draw a line around each group of 9:

How many 9's are in 63? _____

$$9 \times \underline{\quad} = 63$$

$$63 \div 9 = \underline{\quad} \quad 9 \overline{)63}$$

2. How many rows of seats with 9 in a row will be needed for the 72 sixth-grade children? _____



Draw a line around each group of 9:

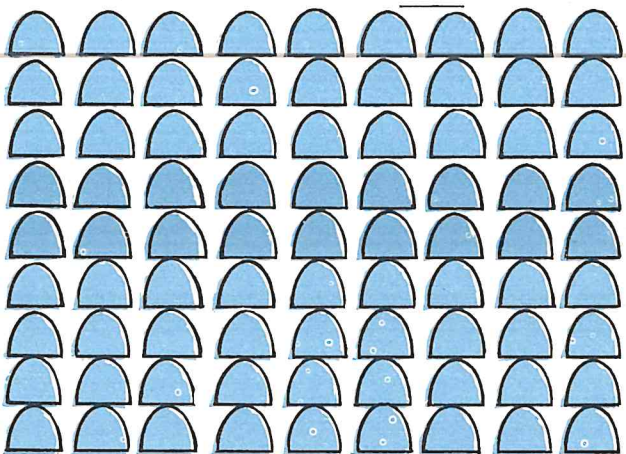
How many 9's are in 72? _____

$$9 \times \underline{\quad} = 72$$

$$72 \div 9 = \underline{\quad} \quad 9 \overline{)72}$$



3. Jim counted 81 seats that were not used. How many rows of 9 seats each were not used? _____

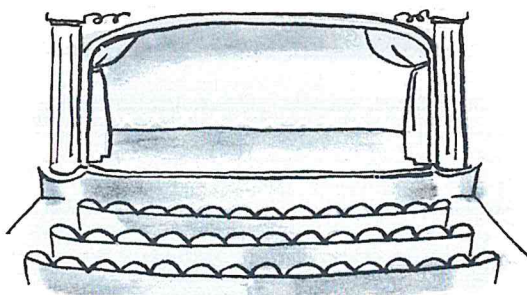


Draw a line around each group of 9:

How many 9's are in 81? _____

$$9 \times \underline{\quad} = 81$$

$$81 \div 9 = \underline{\quad} \quad 9 \overline{)81}$$



4. Write the quotients:

a

b

c

d

e

f

g

h

i

$$9 \overline{)81}$$

$$9 \overline{)27}$$

$$9 \overline{)72}$$

$$9 \overline{)63}$$

$$9 \overline{)45}$$

$$9 \overline{)9}$$

$$9 \overline{)36}$$

$$9 \overline{)18}$$

$$9 \overline{)54}$$

Lesson 24 — ABOUT ONE

1. Find the products:

a	b	c	d	e	f	g	h
$\begin{array}{r} 1 \\ \underline{2} \end{array}$	$\begin{array}{r} 1 \\ \underline{3} \end{array}$	$\begin{array}{r} 1 \\ \underline{5} \end{array}$	$\begin{array}{r} 1 \\ \underline{9} \end{array}$	$\begin{array}{r} 1 \\ \underline{7} \end{array}$	$\begin{array}{r} 1 \\ \underline{6} \end{array}$	$\begin{array}{r} 1 \\ \underline{4} \end{array}$	$\begin{array}{r} 1 \\ \underline{8} \end{array}$

When 1 is multiplied by a number, the product is that number. We can write this fact for any number this way: $n \times 1 = n$. The letter n stands for any number.

2. Find these products: (Remember that $3 \times 1 = 1 \times 3$, $1 \times 5 = 5 \times 1$, or $n \times 1 = 1 \times n$.)

a	b	c	d	e	f	g	h
$\begin{array}{r} 3 \\ \underline{1} \end{array}$	$\begin{array}{r} 5 \\ \underline{1} \end{array}$	$\begin{array}{r} 8 \\ \underline{1} \end{array}$	$\begin{array}{r} 2 \\ \underline{1} \end{array}$	$\begin{array}{r} 4 \\ \underline{1} \end{array}$	$\begin{array}{r} 9 \\ \underline{1} \end{array}$	$\begin{array}{r} 7 \\ \underline{1} \end{array}$	$\begin{array}{r} 6 \\ \underline{1} \end{array}$

3. Find the quotients:

UNIT 2

a	b	c	d	e	f	g	h
$9 \overline{)9}$	$3 \overline{)3}$	$6 \overline{)6}$	$5 \overline{)5}$	$2 \overline{)2}$	$7 \overline{)7}$	$8 \overline{)8}$	$4 \overline{)4}$

Whenever a number is divided by itself, the quotient is 1. Our way for writing this fact for any number, except zero, is $n \div n = 1$. We cannot divide by zero.

4. Find the quotients. The first one is worked for you:

a	b	c	d	e	f	g
$\begin{array}{r} 8 \\ 1 \overline{)8} \end{array}$	$1 \overline{)5}$	$1 \overline{)7}$	$1 \overline{)6}$	$1 \overline{)9}$	$1 \overline{)3}$	$1 \overline{)2}$

You multiply or divide larger numbers by 1 in the same way.

5. Find the products:

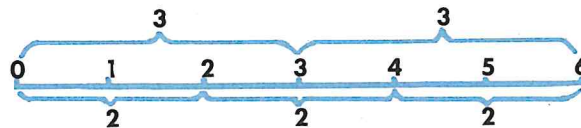
a	b	c	d	e	f	g
$\begin{array}{r} 136 \\ \underline{1} \end{array}$	$\begin{array}{r} 572 \\ \underline{1} \end{array}$	$\begin{array}{r} 27 \\ \underline{1} \end{array}$	$\begin{array}{r} 999 \\ \underline{1} \end{array}$	$\begin{array}{r} 2435 \\ \underline{1} \end{array}$	$\begin{array}{r} 111 \\ \underline{1} \end{array}$	$\begin{array}{r} 33 \\ \underline{1} \end{array}$

6. Find the quotients:

a	b	c	d	e	f
$254 \overline{)254}$	$1 \overline{)783}$	$86 \overline{)86}$	$5924 \overline{)5924}$	$492 \overline{)492}$	$1 \overline{)6778}$



Lesson 25 — FACTORS



The picture and the number line both show that two 3's are 6, and that three 2's are also 6. $2 \times 3 = 6$ $3 \times 2 = 6$

Remember that the answer in a multiplication problem is the **product**. Each of the numbers multiplied is called a **factor** of the product. In the problem $2 \times 3 = 6$ the product is 6 and the factors are 2 and 3.

Remember that $n \times 1 = n$. The product of any number multiplied by 1 is that number. Therefore 1 is a factor of every product.

1. In the problem: $2 \times 5 = 10$, the product is ____.

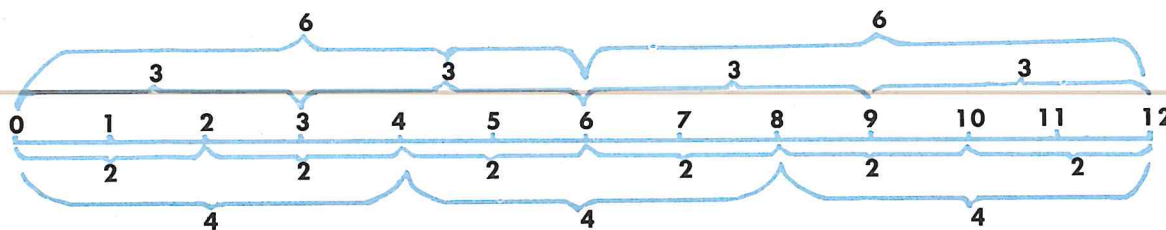
The factors are ____ and _____. 1 and 10 are also factors of 10.

2 UNIT

In the following problems give the factors not including 1: Write the factors of these products:

Product	Factors	Product	Factors	Product	Factors	Product	Factors
2. 9	____	10	____	14	____	15	____
3. 35	____	25	____	49	____	21	____

On the number line do you see: Six 2's? Four 3's? Three 4's? Two 6's?



The number line shows that 2 and 6 are factors of 12, and that 4 and 3 are also factors of 12.

4. Write the products:

$2 \times 9 = \underline{\quad}$
 $9 \times 2 = \underline{\quad}$
 $3 \times 6 = \underline{\quad}$
 $6 \times 3 = \underline{\quad}$

5. On the number line show that 2 and 9 are factors of 18. Find another pair of factors of 18: ____



Lesson 26 — MULTIPLICATION FACTS

Write the products as rapidly as you can:

	a	b	c	d	e	f	g	h	i
1.	$\begin{array}{r} 5 \\ 3 \end{array}$	$\begin{array}{r} 8 \\ 2 \end{array}$	$\begin{array}{r} 9 \\ 1 \end{array}$	$\begin{array}{r} 2 \\ 6 \end{array}$	$\begin{array}{r} 4 \\ 4 \end{array}$	$\begin{array}{r} 3 \\ 5 \end{array}$	$\begin{array}{r} 4 \\ 2 \end{array}$	$\begin{array}{r} 5 \\ 5 \end{array}$	$\begin{array}{r} 7 \\ 2 \end{array}$
2.	$\begin{array}{r} 3 \\ 1 \end{array}$	$\begin{array}{r} 2 \\ 4 \end{array}$	$\begin{array}{r} 4 \\ 3 \end{array}$	$\begin{array}{r} 2 \\ 7 \end{array}$	$\begin{array}{r} 2 \\ 3 \end{array}$	$\begin{array}{r} 3 \\ 3 \end{array}$	$\begin{array}{r} 5 \\ 4 \end{array}$	$\begin{array}{r} 9 \\ 7 \end{array}$	$\begin{array}{r} 1 \\ 4 \end{array}$
3.	$\begin{array}{r} 2 \\ 8 \end{array}$	$\begin{array}{r} 5 \\ 2 \end{array}$	$\begin{array}{r} 3 \\ 2 \end{array}$	$\begin{array}{r} 2 \\ 2 \end{array}$	$\begin{array}{r} 2 \\ 5 \end{array}$	$\begin{array}{r} 6 \\ 5 \end{array}$	$\begin{array}{r} 3 \\ 6 \end{array}$	$\begin{array}{r} 9 \\ 2 \end{array}$	$\begin{array}{r} 6 \\ 2 \end{array}$
4.	$\begin{array}{r} 2 \\ 9 \end{array}$	$\begin{array}{r} 7 \\ 3 \end{array}$	$\begin{array}{r} 1 \\ 7 \end{array}$	$\begin{array}{r} 5 \\ 7 \end{array}$	$\begin{array}{r} 6 \\ 3 \end{array}$	$\begin{array}{r} 3 \\ 4 \end{array}$	$\begin{array}{r} 7 \\ 5 \end{array}$	$\begin{array}{r} 4 \\ 5 \end{array}$	$\begin{array}{r} 9 \\ 9 \end{array}$
5.	$\begin{array}{r} 3 \\ 7 \end{array}$	$\begin{array}{r} 2 \\ 1 \end{array}$	$\begin{array}{r} 6 \\ 4 \end{array}$	$\begin{array}{r} 5 \\ 9 \end{array}$	$\begin{array}{r} 7 \\ 7 \end{array}$	$\begin{array}{r} 6 \\ 6 \end{array}$	$\begin{array}{r} 3 \\ 8 \end{array}$	$\begin{array}{r} 7 \\ 1 \end{array}$	$\begin{array}{r} 3 \\ 9 \end{array}$
6.	$\begin{array}{r} 4 \\ 6 \end{array}$	$\begin{array}{r} 1 \\ 2 \end{array}$	$\begin{array}{r} 8 \\ 3 \end{array}$	$\begin{array}{r} 6 \\ 7 \end{array}$	$\begin{array}{r} 4 \\ 8 \end{array}$	$\begin{array}{r} 9 \\ 3 \end{array}$	$\begin{array}{r} 7 \\ 6 \end{array}$	$\begin{array}{r} 5 \\ 1 \end{array}$	$\begin{array}{r} 9 \\ 5 \end{array}$
7.	$\begin{array}{r} 1 \\ 9 \end{array}$	$\begin{array}{r} 5 \\ 8 \end{array}$	$\begin{array}{r} 5 \\ 6 \end{array}$	$\begin{array}{r} 1 \\ 5 \end{array}$	$\begin{array}{r} 4 \\ 7 \end{array}$	$\begin{array}{r} 8 \\ 5 \end{array}$	$\begin{array}{r} 4 \\ 1 \end{array}$	$\begin{array}{r} 4 \\ 9 \end{array}$	$\begin{array}{r} 8 \\ 8 \end{array}$
8.	$\begin{array}{r} 7 \\ 4 \end{array}$	$\begin{array}{r} 1 \\ 8 \end{array}$	$\begin{array}{r} 8 \\ 1 \end{array}$	$\begin{array}{r} 8 \\ 6 \end{array}$	$\begin{array}{r} 1 \\ 3 \end{array}$	$\begin{array}{r} 9 \\ 4 \end{array}$	$\begin{array}{r} 1 \\ 6 \end{array}$	$\begin{array}{r} 8 \\ 9 \end{array}$	$\begin{array}{r} 6 \\ 1 \end{array}$
9.	$\begin{array}{r} 7 \\ 8 \end{array}$	$\begin{array}{r} 9 \\ 8 \end{array}$	$\begin{array}{r} 8 \\ 4 \end{array}$	$\begin{array}{r} 5 \\ 1 \end{array}$	$\begin{array}{r} 6 \\ 8 \end{array}$	$\begin{array}{r} 9 \\ 6 \end{array}$	$\begin{array}{r} 7 \\ 9 \end{array}$	$\begin{array}{r} 6 \\ 9 \end{array}$	$\begin{array}{r} 8 \\ 7 \end{array}$

UNIT 2

Find the multiplication facts on p. 160 for those you missed. Make self-study cards for the facts you do not know by putting the problem on the front and the product on the back.

Lesson 27 — DIVISION FACTS

Find the quotients as rapidly as you can:

a

b

c

d

e

f

g

h

1. $5 \overline{)15}$ $7 \overline{)7}$ $8 \overline{)32}$ $6 \overline{)6}$ $5 \overline{)35}$ $9 \overline{)18}$ $8 \overline{)16}$ $4 \overline{)20}$

2. $3 \overline{)12}$ $9 \overline{)27}$ $3 \overline{)18}$ $4 \overline{)16}$ $3 \overline{)3}$ $2 \overline{)2}$ $7 \overline{)21}$ $3 \overline{)21}$

3. $5 \overline{)20}$ $6 \overline{)36}$ $9 \overline{)81}$ $7 \overline{)14}$ $2 \overline{)16}$ $2 \overline{)8}$ $5 \overline{)40}$ $2 \overline{)12}$

4. $2 \overline{)14}$ $2 \overline{)6}$ $5 \overline{)10}$ $5 \overline{)25}$ $3 \overline{)9}$ $2 \overline{)10}$ $8 \overline{)56}$ $9 \overline{)63}$

5. $2 \overline{)4}$ $4 \overline{)36}$ $4 \overline{)12}$ $6 \overline{)54}$ $9 \overline{)36}$ $7 \overline{)42}$ $8 \overline{)64}$ $8 \overline{)48}$

6. $7 \overline{)63}$ $6 \overline{)48}$ $8 \overline{)8}$ $4 \overline{)24}$ $7 \overline{)49}$ $8 \overline{)40}$ $8 \overline{)72}$ $3 \overline{)24}$

7. $9 \overline{)72}$ $9 \overline{)9}$ $8 \overline{)24}$ $4 \overline{)32}$ $6 \overline{)24}$ $2 \overline{)18}$ $9 \overline{)45}$ $3 \overline{)27}$

8. $6 \overline{)30}$ $7 \overline{)35}$ $3 \overline{)6}$ $4 \overline{)8}$ $7 \overline{)28}$ $5 \overline{)5}$ $6 \overline{)42}$ $5 \overline{)45}$

9. $6 \overline{)12}$ $7 \overline{)56}$ $4 \overline{)4}$ $5 \overline{)30}$ $3 \overline{)15}$ $9 \overline{)54}$ $4 \overline{)28}$ $6 \overline{)18}$

Find the division facts on p. 160 for those that you missed. Make self-study cards for the facts you do not know by putting the problem on the front and the quotient on the back.

Lesson 28 — TEST YOURSELF

1. Find the sums:

a	b	c	d
\$4.62	367	870	400
3.86	685	500	735
<u>2.28</u>	<u>38</u>	<u>239</u>	<u>298</u>

2. Find the differences:

a	b	c	d
\$4.58	725	158	246
<u>2.08</u>	<u>375</u>	<u>99</u>	<u>187</u>

Find the products:

	a	b	c	d	e	f	g	h	i	j	k
3.	$\begin{array}{r} 1 \\ 4 \end{array}$	$\begin{array}{r} 8 \\ 4 \end{array}$	$\begin{array}{r} 3 \\ 5 \end{array}$	$\begin{array}{r} 4 \\ 5 \end{array}$	$\begin{array}{r} 6 \\ 6 \end{array}$	$\begin{array}{r} 9 \\ 7 \end{array}$	$\begin{array}{r} 6 \\ 5 \end{array}$	$\begin{array}{r} 7 \\ 9 \end{array}$	$\begin{array}{r} 2 \\ 4 \end{array}$	$\begin{array}{r} 1 \\ 6 \end{array}$	$\begin{array}{r} 8 \\ 2 \end{array}$
4.	$\begin{array}{r} 5 \\ 2 \end{array}$	$\begin{array}{r} 7 \\ 3 \end{array}$	$\begin{array}{r} 7 \\ 8 \end{array}$	$\begin{array}{r} 1 \\ 9 \end{array}$	$\begin{array}{r} 5 \\ 5 \end{array}$	$\begin{array}{r} 2 \\ 6 \end{array}$	$\begin{array}{r} 5 \\ 7 \end{array}$	$\begin{array}{r} 2 \\ 8 \end{array}$	$\begin{array}{r} 8 \\ 9 \end{array}$	$\begin{array}{r} 4 \\ 4 \end{array}$	$\begin{array}{r} 8 \\ 8 \end{array}$
5.	$\begin{array}{r} 5 \\ 3 \end{array}$	$\begin{array}{r} 3 \\ 6 \end{array}$	$\begin{array}{r} 3 \\ 8 \end{array}$	$\begin{array}{r} 6 \\ 9 \end{array}$	$\begin{array}{r} 3 \\ 4 \end{array}$	$\begin{array}{r} 4 \\ 7 \end{array}$	$\begin{array}{r} 4 \\ 2 \end{array}$	$\begin{array}{r} 1 \\ 3 \end{array}$	$\begin{array}{r} 6 \\ 4 \end{array}$	$\begin{array}{r} 9 \\ 9 \end{array}$	$\begin{array}{r} 9 \\ 5 \end{array}$

UNIT 2

Find the quotients:

	a	b	c	d	e	f	g	h	i
6.	$2 \overline{)2}$	$3 \overline{)12}$	$4 \overline{)20}$	$5 \overline{)25}$	$6 \overline{)18}$	$2 \overline{)16}$	$4 \overline{)36}$	$7 \overline{)7}$	$8 \overline{)72}$
7.	$7 \overline{)28}$	$3 \overline{)18}$	$8 \overline{)32}$	$9 \overline{)27}$	$2 \overline{)8}$	$6 \overline{)6}$	$7 \overline{)63}$	$9 \overline{)18}$	$3 \overline{)27}$
8.	$4 \overline{)32}$	$3 \overline{)24}$	$2 \overline{)18}$	$9 \overline{)9}$	$8 \overline{)64}$	$8 \overline{)56}$	$7 \overline{)42}$	$9 \overline{)81}$	$6 \overline{)36}$
9.	$4 \overline{)28}$	$5 \overline{)35}$	$6 \overline{)54}$	$8 \overline{)16}$	$7 \overline{)35}$	$5 \overline{)10}$	$5 \overline{)5}$	$5 \overline{)40}$	$9 \overline{)36}$

Write the missing numbers:

	a	b	c	d
10.	$2 \times \underline{\quad} = 12$	$6 \times \underline{\quad} = 18$	$8 \times \underline{\quad} = 40$	$5 \times \underline{\quad} = 35$
11.	$4 \times 3 = 3 \times \underline{\quad}$	$5 + 6 + 6 = \underline{\quad}$	$3 \times 5 = 5 \times \underline{\quad}$	$9 + 5 + 5 = \underline{\quad}$
12.	$5 \times 6 = 6 \times \underline{\quad}$	$7 + 5 + 5 = \underline{\quad}$	$4 \times 7 = 7 \times \underline{\quad}$	$8 + 6 + 6 = \underline{\quad}$

13. Write the numbers as you count by 50's: 100 _____

14. Write the numbers as you count by 100's: 389 _____

TOP SCORE: 99 MY SCORE: _____

55

Lesson 1 — MULTIPLYING LARGER NUMBERS

1. Jim skated across the width of the school playground 3 times. The playground is 132 feet wide. How many feet did Jim skate? _____

Multiply: 132 = 1 hundred, 3 tens, 2 ones

$$\begin{array}{r} 132 \\ \times 3 \\ \hline \end{array}$$

3 hundreds, 9 tens, 6 ones = 396

2. Sue skated across the width of the same playground, which is 132 feet long, 2 times. How many feet did Sue skate? _____

3. Jim skated along the length of the playground 2 times. The playground is 234 feet long. How many feet did Jim skate? _____

4. Jim and Sue live in the same block. The distance between their houses is 321 feet. If Sue skated the distance between the houses 3 times, how far did she skate? _____

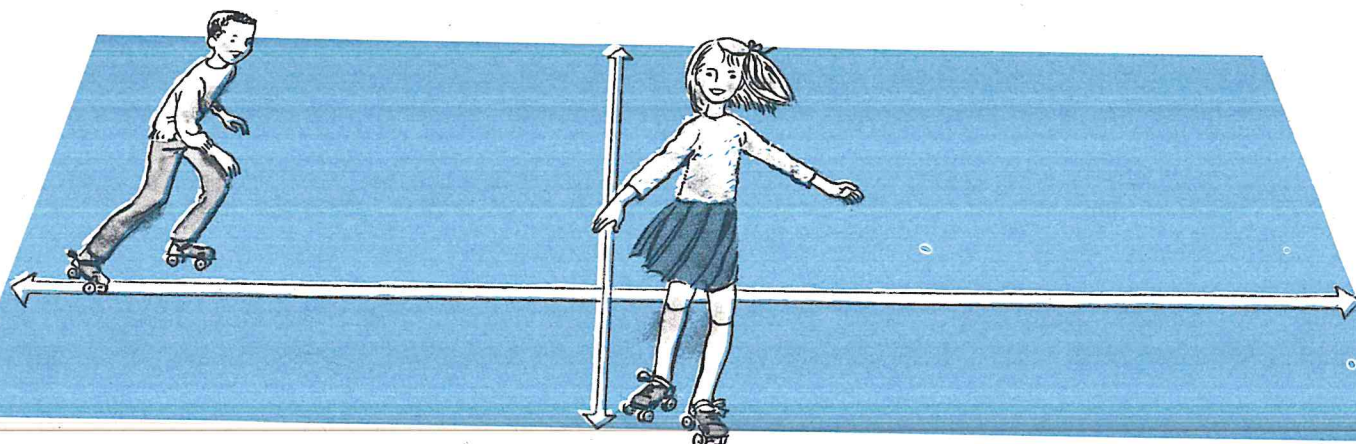
Work Space

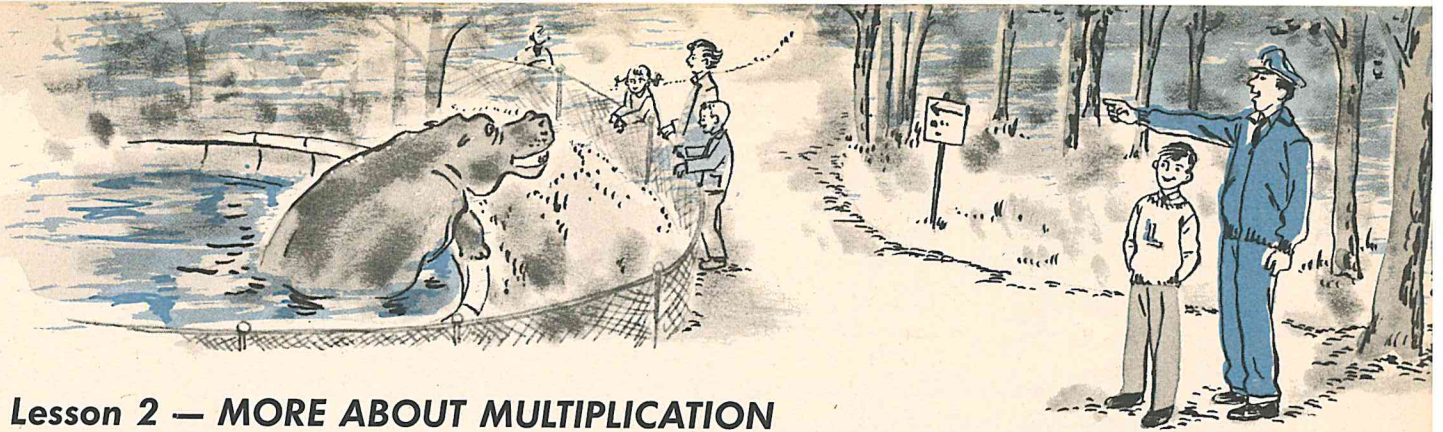
$$\begin{array}{r} 132 \\ \times 2 \\ \hline \end{array}$$

3 UNIT

Write the products:

	a	b	c	d	e	f	g	h
5.	$\begin{array}{r} 3 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 212 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 231 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 212 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ \times 7 \\ \hline \end{array}$
6.	$\begin{array}{r} 11 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 142 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 132 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 231 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 234 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ \times 3 \\ \hline \end{array}$
7.	$\begin{array}{r} 21 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 122 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 432 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 331 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 112 \\ \times 4 \\ \hline \end{array}$





Lesson 2 — MORE ABOUT MULTIPLICATION

1. Nancy counted 16 children standing in line to ride the merry-go-round. There were 2 times that number riding. How many children were riding the merry-go-round? _____

To find how many children were riding, multiply 16 by 2.

$$\begin{array}{r} 16 = 1 \text{ ten } 6 \text{ ones} \\ \times 2 = \quad \times 2 \\ \hline 2 \text{ tens } 12 \text{ ones or} \\ 3 \text{ tens } 2 \text{ ones} = 32 \end{array}$$

Work Space

2. There were 14 children riding the ponies at the park and 3 times that number waiting to ride. How many children were waiting to ride the ponies? _____

3. The zoo keeper told Jim there were 19 large animals in the zoo and 5 times that number of small animals. How many small animals were there in the zoo? _____

To find the number of small animals in the zoo, multiply 19 by 5.

$$\begin{array}{r} 19 = 1 \text{ ten } 9 \text{ ones} \\ \times 5 = \quad \times 5 \\ \hline 5 \text{ tens } 45 \text{ ones or} \\ 9 \text{ tens } 5 \text{ ones} = 95 \end{array}$$

Work Space

4. The children came to the park in 4 school buses. If 24 children rode in each bus, how many children came to the park? _____

Multiply:

a	b	c	d	e	f	g
5. $\begin{array}{r} 25 \\ 3 \end{array}$	$\begin{array}{r} 14 \\ 7 \end{array}$	$\begin{array}{r} 24 \\ 4 \end{array}$	$\begin{array}{r} 17 \\ 5 \end{array}$	$\begin{array}{r} 1 \\ 6 \end{array}$	$\begin{array}{r} 10 \\ 8 \end{array}$	$\begin{array}{r} 11 \\ 9 \end{array}$
6. $\begin{array}{r} 23 \\ 4 \end{array}$	$\begin{array}{r} 14 \\ 5 \end{array}$	$\begin{array}{r} 12 \\ 8 \end{array}$	$\begin{array}{r} 1 \\ 6 \end{array}$	$\begin{array}{r} 48 \\ 2 \end{array}$	$\begin{array}{r} 3 \\ 7 \end{array}$	$\begin{array}{r} 9 \\ 9 \end{array}$
7. $\begin{array}{r} 29 \\ 3 \end{array}$	$\begin{array}{r} 12 \\ 7 \end{array}$	$\begin{array}{r} 15 \\ 4 \end{array}$	$\begin{array}{r} 18 \\ 5 \end{array}$	$\begin{array}{r} 14 \\ 6 \end{array}$	$\begin{array}{r} 8 \\ 8 \end{array}$	$\begin{array}{r} 17 \\ 4 \end{array}$

UNIT 3



Lesson 3 — MULTIPLYING TWO-PLACE NUMBERS

1. Mr. Smith sells 98 quarts of milk each morning. How many quarts of milk does he sell in 2 mornings? _____ To find the answer, multiply 98 by 2. Mary, Jim, and Betty worked the problem in different ways.

$$\begin{array}{r} 98 \text{ (} 90 + 8 \text{)} \\ \times 2 \\ \hline 16 \text{ (} 2 \times 8 \text{)} \\ 180 \text{ (} 2 \times 90 \text{)} \\ \hline 196 \end{array}$$

Mary's way ↑

$$\begin{array}{r} 98 = 9 \text{ tens } 8 \text{ ones} \\ \times 2 \\ \hline 196 = 18 \text{ tens } 16 \text{ ones} \\ \text{or} \\ 19 \text{ tens } 6 \text{ ones} \\ \text{or} \\ 1 \text{ hundred, } 9 \text{ tens } 6 \text{ ones} = 196 \end{array}$$

Jim's way ↑

$$\begin{array}{r} 98 \\ \times 2 \\ \hline 196 \end{array}$$

Betty's way
 $2 \times 8 \text{ ones} = 16 \text{ ones}$
 $16 \text{ ones} = 1 \text{ ten, } 6 \text{ ones}$
 Write 6 in the ones' place.
 Add the ten to the other tens.
 $2 \times 9 \text{ tens} = 18 \text{ tens}$
 $18 \text{ tens} + 1 \text{ ten} = 19 \text{ tens}$
 $19 \text{ tens} = 1 \text{ hundred, } 9 \text{ tens}$
 Write 9 in the tens' place.
 Write 1 in the hundreds' place.

2. Mr. Smith made 95 stops each day on his milk route. How many stops did he make in 3 days?

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To find the answer, multiply 95×3 .

3. Mrs. Smith sells 25 pounds of butter a week. How many pounds of butter does she sell in 7 weeks?

4. Mr. Smith sells 86 bottles of cream each week. How many bottles does he sell in 4 weeks?

Work Space

Find the products:

a	b	c	d	e	f	g	h	i
5. $\begin{array}{r} 89 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 84 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 85 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 85 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 71 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ \times 8 \\ \hline \end{array}$
6. $\begin{array}{r} 53 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 64 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 59 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 92 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 52 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 99 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 94 \\ \times 5 \\ \hline \end{array}$
7. $\begin{array}{r} 49 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 59 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 96 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 64 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 71 \\ \times 8 \\ \hline \end{array}$
8. $\begin{array}{r} 72 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 88 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 83 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 94 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 66 \\ \times 7 \\ \hline \end{array}$

Lesson 4 — MULTIPLYING THREE-PLACE NUMBERS

1. Mary has 187 stamps. Jim said that he and Betty had twice as many. Mary found out how many the other two had, but Jim said there was a shorter way to find out. Betty said she knew an even easier way to work the problem.

Jim's way

$$\begin{array}{r} 187 \\ \times 2 \\ \hline 14 \text{ (} 2 \times 7 \text{ ones)} \\ 160 \text{ (} 2 \times 8 \text{ tens)} \\ \underline{200 \text{ (} 2 \times 1 \text{ hundred)}} \\ 374 \end{array}$$

Mary's Way

$$\begin{array}{l} 187 = 1 \text{ hundred, } 8 \text{ tens, } 7 \text{ ones} \\ \times 2 \qquad \qquad \qquad \times 2 \\ \hline 2 \text{ hundreds, } 16 \text{ tens, } 14 \text{ ones} \\ \text{or} \\ 2 \text{ hundreds, } 17 \text{ tens, } 4 \text{ ones} \\ \text{or} \\ 3 \text{ hundreds, } 7 \text{ tens, } 4 \text{ ones} = 374 \end{array}$$

Betty's Way

$$\begin{array}{r} 187 \\ \times 2 \\ \hline 374 \end{array}$$

$2 \times 7 \text{ ones} = 14 \text{ ones.}$
 $14 \text{ ones} = 1 \text{ ten, } 4 \text{ ones.}$
 Write the 4 in the ones' place.
 Add the ten to the other tens.
 $2 \times 8 \text{ tens} = 16 \text{ tens.}$
 $16 \text{ tens} + 1 \text{ ten} = 17 \text{ tens.}$
 $17 \text{ tens} = 1 \text{ hundred, } 7 \text{ tens.}$
 Write 7 in the tens' place.
 $2 \times 1 = 2 \text{ hundreds}$
 Add the 2 to the 1 hundred
 $2 + 1 = 3 \text{ hundred}$
 Write 3 in the hundreds' place.

Did each one get the same answer?
Do you understand each one's way?

UNIT 3

2. Bob has 128 stamps. His uncle has 7 times as many. How many does Bob's uncle have? _____

Work Space

3. Bill has 165 stamps. Tom has 4 times as many. How many stamps does Tom have? _____

Multiply:

a	b	c	d	e	f	g
4. $\begin{array}{r} 124 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 247 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 132 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 163 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 156 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 121 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 127 \\ \times 7 \\ \hline \end{array}$
5. $\begin{array}{r} 119 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 148 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 112 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 132 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 145 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 298 \\ \times 3 \\ \hline \end{array}$

TOP SCORE: 16 MY SCORE: _____





Lesson 5 — MULTIPLYING MONEY

Dollars and cents are multiplied the same as other numbers are multiplied. A point and a dollar sign must be placed in the answer. There should always be 2 numbers after the point.

1. Bob bought 5 plants for gifts. He paid \$1.25 for each plant. $\times 5$
What did he pay for the 5 plants? \$6.25

2. Jim bought 3 potted plants. Each plant cost \$1.75. How much did Jim pay for plants?

Work Space

Before multiplying amounts less than one dollar, write the amount with a dollar sign and a point.

3. Sue bought a rose for Aunt Mary and another one for Aunt Ann. The roses cost 75¢ each. $\times 2$
How much did the 2 roses cost? \$1.50

4. Jane bought little pink vases for 5 of her best friends. The vases cost 25¢ each. How much did the 5 vases cost?

Work Space

5. Place the dollar signs and points where they belong:

The dollar sign and the point are missing in each of these products.

\$1.65	\$1.98	\$2.37	\$3.58
<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>
8 25	7 92	7 11	7 16

6. Find the products:

a	b	c	d	e	f	g	h
\$.34	\$2.69	\$1.83	\$1.96	\$4.97	\$.69	\$1.77	\$2.56
<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>2</u>	<u>4</u>	<u>5</u>	<u>3</u>

Lesson 6 — MULTIPLYING WITH ZEROS

1. Jerry bought 3 packages of flower seed. Each package had 120 seeds. How many seeds were in the 3 packages? _____

To find how many seeds were in 3 packages, add $120 + 120 + 120$ \longrightarrow

$$\begin{array}{r} 120 \\ 120 \\ 120 \\ \hline 360 \end{array}$$

or multiply 120 by 3 \searrow

120 = 1 hundred, 2 tens, 0 ones

$$\begin{array}{r} 120 \\ \times 3 \\ \hline \end{array}$$

3 hundreds, 6 tens, 0 ones = 360

$$0 + 0 + 0 = 0$$

or

Three 0's are 0.

$$3 \times 0 = 0$$

Write 0 in ones' place.

Zero multiplied by any number is zero. We can write this fact for any number this way: $n \times 0 = 0$. You know that $3 \times 2 = 2 \times 3$, and so on. Since $n \times 0 = 0$, then $0 \times n = 0$ also.

2. How many are $0 + 0 + 0 + 0$? _____

How many are four 0's? _____

3. Ned bought 4 sacks of marbles. There were 150 marbles in each sack. How many marbles were in the four sacks? _____

Work Space

4. Ann bought 3 packages of seeds. Each package had 108 seeds. How many seeds were in the 3 packages? _____

108 = 1 hundred, 0 tens, 8 ones

$$\begin{array}{r} 108 \\ \times 3 \\ \hline \end{array}$$

3 hundreds, 0 tens, 24 ones or

3 hundreds, 2 tens, 4 ones = 324

$$3 \times 108 = 324$$

UNIT 3

Find the products:

a	b	c	d	e	f	g	h
5. $\begin{array}{r} 490 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 130 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 160 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 130 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 130 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 280 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 110 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 110 \\ \times 9 \\ \hline \end{array}$
6. $\begin{array}{r} 302 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 206 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 105 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 407 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 109 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 204 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 203 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 108 \\ \times 9 \\ \hline \end{array}$

TOP SCORE: 21 MY SCORE: _____



Lesson 7 — PRACTICE

Find the sums:

	a	b	c	d	e	f	g	h	i	j	k	l
1.	$\begin{array}{r} 3 \\ 8 \\ 4 \end{array}$	$\begin{array}{r} 3 \\ 7 \\ 8 \end{array}$	$\begin{array}{r} 5 \\ 4 \\ 3 \end{array}$	$\begin{array}{r} 8 \\ 7 \\ 9 \end{array}$	$\begin{array}{r} 6 \\ 5 \\ 9 \end{array}$	$\begin{array}{r} 7 \\ 9 \\ 6 \end{array}$	$\begin{array}{r} 6 \\ 7 \\ 4 \end{array}$	$\begin{array}{r} 8 \\ 4 \\ 5 \end{array}$	$\begin{array}{r} 9 \\ 5 \\ 7 \end{array}$	$\begin{array}{r} 3 \\ 4 \\ 6 \end{array}$	$\begin{array}{r} 4 \\ 9 \\ 8 \end{array}$	$\begin{array}{r} 5 \\ 3 \\ 2 \end{array}$

	a	b	c	d	e	f	g	h
2.	$\begin{array}{r} 73 \\ 34 \\ 33 \end{array}$	$\begin{array}{r} 25 \\ 65 \\ 94 \end{array}$	$\begin{array}{r} 215 \\ 350 \\ 438 \end{array}$	$\begin{array}{r} 156 \\ 408 \\ 803 \end{array}$	$\begin{array}{r} 147 \\ 528 \\ 403 \end{array}$	$\begin{array}{r} 34 \\ 29 \\ 25 \end{array}$	$\begin{array}{r} 53 \\ 28 \\ 29 \end{array}$	$\begin{array}{r} 502 \\ 409 \\ 793 \end{array}$

3.	$\begin{array}{r} 5432 \\ 1729 \end{array}$	$\begin{array}{r} 4090 \\ 2390 \end{array}$	$\begin{array}{r} 1926 \\ 6482 \end{array}$	$\begin{array}{r} 5907 \\ 4009 \end{array}$	$\begin{array}{r} 6450 \\ 3679 \end{array}$	$\begin{array}{r} 4941 \\ 2412 \end{array}$	$\begin{array}{r} 5070 \\ 2390 \end{array}$	$\begin{array}{r} 4872 \\ 3412 \end{array}$
----	---	---	---	---	---	---	---	---

Find the differences:

	a	b	c	d	e	f	g	h	i	j
4.	$\begin{array}{r} 15 \\ 8 \end{array}$	$\begin{array}{r} 90 \\ 30 \end{array}$	$\begin{array}{r} 79 \\ 34 \end{array}$	$\begin{array}{r} 68 \\ 28 \end{array}$	$\begin{array}{r} 34 \\ 20 \end{array}$	$\begin{array}{r} 17 \\ 9 \end{array}$	$\begin{array}{r} 80 \\ 60 \end{array}$	$\begin{array}{r} 86 \\ 32 \end{array}$	$\begin{array}{r} 94 \\ 30 \end{array}$	$\begin{array}{r} 59 \\ 29 \end{array}$

	a	b	c	d	e	f	g	h
5.	$\begin{array}{r} 640 \\ 226 \end{array}$	$\begin{array}{r} 964 \\ 391 \end{array}$	$\begin{array}{r} 853 \\ 497 \end{array}$	$\begin{array}{r} 547 \\ 209 \end{array}$	$\begin{array}{r} 708 \\ 368 \end{array}$	$\begin{array}{r} 930 \\ 419 \end{array}$	$\begin{array}{r} 762 \\ 284 \end{array}$	$\begin{array}{r} 607 \\ 387 \end{array}$

6.	$\begin{array}{r} 4607 \\ 2752 \end{array}$	$\begin{array}{r} 8070 \\ 4390 \end{array}$	$\begin{array}{r} 9007 \\ 3968 \end{array}$	$\begin{array}{r} 7843 \\ 2009 \end{array}$	$\begin{array}{r} 6504 \\ 1781 \end{array}$	$\begin{array}{r} 9060 \\ 3480 \end{array}$	$\begin{array}{r} 8005 \\ 3757 \end{array}$	$\begin{array}{r} 8734 \\ 4009 \end{array}$
----	---	---	---	---	---	---	---	---

Find the products:

	a	b	c	d	e	f	g	h
7.	$\begin{array}{r} 23 \\ 2 \end{array}$	$\begin{array}{r} 45 \\ 9 \end{array}$	$\begin{array}{r} 89 \\ 4 \end{array}$	$\begin{array}{r} 67 \\ 7 \end{array}$	$\begin{array}{r} 80 \\ 8 \end{array}$	$\begin{array}{r} 29 \\ 4 \end{array}$	$\begin{array}{r} 38 \\ 5 \end{array}$	$\begin{array}{r} 69 \\ 9 \end{array}$

8.	$\begin{array}{r} 34 \\ 9 \end{array}$	$\begin{array}{r} 120 \\ 8 \end{array}$	$\begin{array}{r} 179 \\ 5 \end{array}$	$\begin{array}{r} 108 \\ 5 \end{array}$	$\begin{array}{r} 197 \\ 5 \end{array}$	$\begin{array}{r} 146 \\ 6 \end{array}$	$\begin{array}{r} 140 \\ 7 \end{array}$	$\begin{array}{r} 51 \\ 8 \end{array}$
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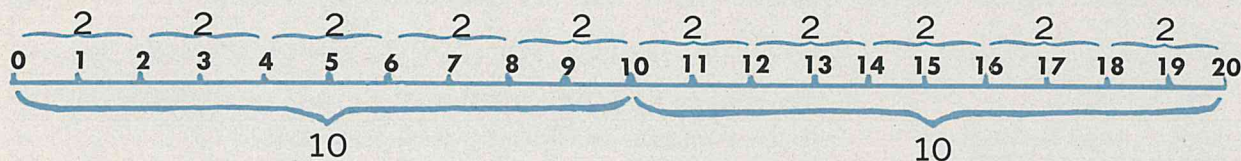
9.	$\begin{array}{r} 197 \\ 4 \end{array}$	$\begin{array}{r} 305 \\ 3 \end{array}$	$\begin{array}{r} 331 \\ 2 \end{array}$	$\begin{array}{r} 130 \\ 7 \end{array}$	$\begin{array}{r} 30 \\ 9 \end{array}$	$\begin{array}{r} 226 \\ 4 \end{array}$	$\begin{array}{r} 237 \\ 3 \end{array}$	$\begin{array}{r} 192 \\ 2 \end{array}$
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Lesson 8 — MULTIPLYING BY TENS AND HUNDREDS

1. Count and write by 10's to 100:

Write the missing numbers:

2. One 10 is _____. Two 10's are _____. Four 10's are _____.
 3. Seven 10's are _____. Five 10's are _____. Nine 10's are _____.



The number line shows that two 10's are the same as ten 2's. Since $2 \times 10 = 20$ and $10 \times 2 = 20$, do you see that $2 \times 10 = 10 \times 2$?

4. Find the products. The first one is worked for you:

a	b	c	d	e	f	g	h	i
$\begin{array}{r} 4 \\ 10 \\ \hline 40 \end{array}$	$\begin{array}{r} 2 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 10 \\ \hline \end{array}$

UNIT 3

5. Find the product of 20 and 3:

$$\begin{array}{r} 20 = 2 \text{ tens} \\ \times 3 = \times 3 \\ \hline 60 = 6 \text{ tens} \end{array}$$

$$\begin{array}{r} 3 = 3 \\ \times 20 = \times 2 \text{ tens} \\ \hline \end{array}$$

Since $3 \times 20 = 60$ and $20 \times 3 = 60$, do you see that $3 \times 20 = 20 \times 3$?

6. Find the products. The first one is worked for you:

a	b	c	d	e	f	g	h	i	j
$\begin{array}{r} 8 \\ 20 \\ \hline 160 \end{array}$	$\begin{array}{r} 6 \\ 40 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 20 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 40 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 20 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 90 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 30 \\ \hline \end{array}$

You can multiply by 100's in the same way that you multiply by 10's.

7. Find the product of 200 and 4:

$$\begin{array}{r} 200 = 2 \text{ hundreds} \\ \times 4 = \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 4 = 4 \\ \times 200 = \times 2 \text{ hundreds} \\ \hline \end{array}$$

You can see that $4 \times 200 = 200 \times 4$.

8. Find the products:

a	b	c	d	e	f	g	h
$\begin{array}{r} 8 \\ 100 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 300 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 200 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 100 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 200 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 500 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 200 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 100 \\ \hline \end{array}$

Lesson 9 — MULTIPLICATION BY TENS AND HUNDREDS

1. Carol's mother canned 34 jars of pickles. She counted that she could get 20 pickles in each jar. How many pickles did she can? _____

$$\begin{array}{r} 34 = 34 \\ \times 20 = \times 2 \text{ tens} \\ \hline 68 \text{ tens} = 680 \\ 2 \text{ tens} \times 34 = 680 \\ 20 \times 34 = 680 \end{array}$$

To find the number of pickles, multiply 34 by 20. Multiplying by 20 is the same as multiplying by 2 tens. $2 \text{ tens} \times 34 = 68 \text{ tens}$. $68 \text{ tens} = 680$.

2. In his orchard Carol's father had 28 rows of fruit trees with 300 trees in a row. How many trees were there in the orchard? _____ To multiply a number by hundreds, follow the same steps as for tens.

$$\begin{array}{r} 28 = 28 \\ \times 300 = \times 3 \text{ hundreds} \\ \hline 8400 = 84 \text{ hundreds} \\ 3 \text{ hundreds} \times 28 = 8400 \\ 300 \times 28 = 8400 \end{array}$$

Remember that $300 = 3 \text{ hundreds}$, and multiplying by 300 is the same as multiplying by 3 hundreds.

$$3 \text{ hundreds} \times 28 = 84 \text{ hundreds} \quad 84 \text{ hundreds} = 8400$$

Multiply:

3 UNIT

	a	b	c	d	e	f	g	h	i
3.	$\begin{array}{r} 23 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ \times 30 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ \times 20 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ \times 40 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ \times 200 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ \times 500 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ \times 800 \\ \hline \end{array}$
4.	$\begin{array}{r} 32 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ \times 20 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 84 \\ \times 50 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ \times 400 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ \times 200 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ \times 800 \\ \hline \end{array}$
5.	$\begin{array}{r} 13 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ \times 80 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ \times 70 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 58 \\ \times 80 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ \times 700 \\ \hline \end{array}$	$\begin{array}{r} 42 \\ \times 300 \\ \hline \end{array}$	$\begin{array}{r} 53 \\ \times 600 \\ \hline \end{array}$
6.	$\begin{array}{r} 28 \\ \times 90 \\ \hline \end{array}$	$\begin{array}{r} 68 \\ \times 40 \\ \hline \end{array}$	$\begin{array}{r} 58 \\ \times 60 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ \times 30 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ \times 40 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ \times 60 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ \times 700 \\ \hline \end{array}$	$\begin{array}{r} 68 \\ \times 500 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ \times 900 \\ \hline \end{array}$



TOP SCORE: 29 MY SCORE: _____

Lesson 10 — TWO-PLACE MULTIPLIERS

1. Mr. White's car will go 23 miles on a gallon of gasoline. How far can it go on 12 gallons of gasoline? _____

$\begin{array}{r} 23 \\ 12 \\ \hline \end{array}$		$\begin{array}{r} 23 \\ 12 \\ \hline \end{array}$
$\begin{array}{l} 6 (2 \times 3) \\ 40 (2 \times 20) \\ 30 (10 \times 3) \\ 200 (10 \times 20) \\ \hline 276 \end{array}$	$\left. \begin{array}{l} 2 \times 23 = 46 \\ 10 \times 23 = 230 \end{array} \right\}$	$\begin{array}{r} 46 \\ 230 \\ \hline 276 \end{array}$

2. Mr. White drove to the country to buy eggs for his store. He bought 14 dozen eggs. How many are there in 14 dozen? _____
3. Mr. White's car has a gas tank that holds 16 gallons of gasoline. If the car goes 23 miles on a gallon of gasoline, how far will it go on a full tank? _____
4. He also bought 13 large crates of berries. If there were 16 quarts of berries in each crate, how many quarts of berries were there in the 13 crates? _____

Multiply:

a	b	c	d	e	f	g	h
$\begin{array}{r} 37 \\ 12 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 14 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 15 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 12 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 13 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 12 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ 16 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 17 \\ \hline \end{array}$

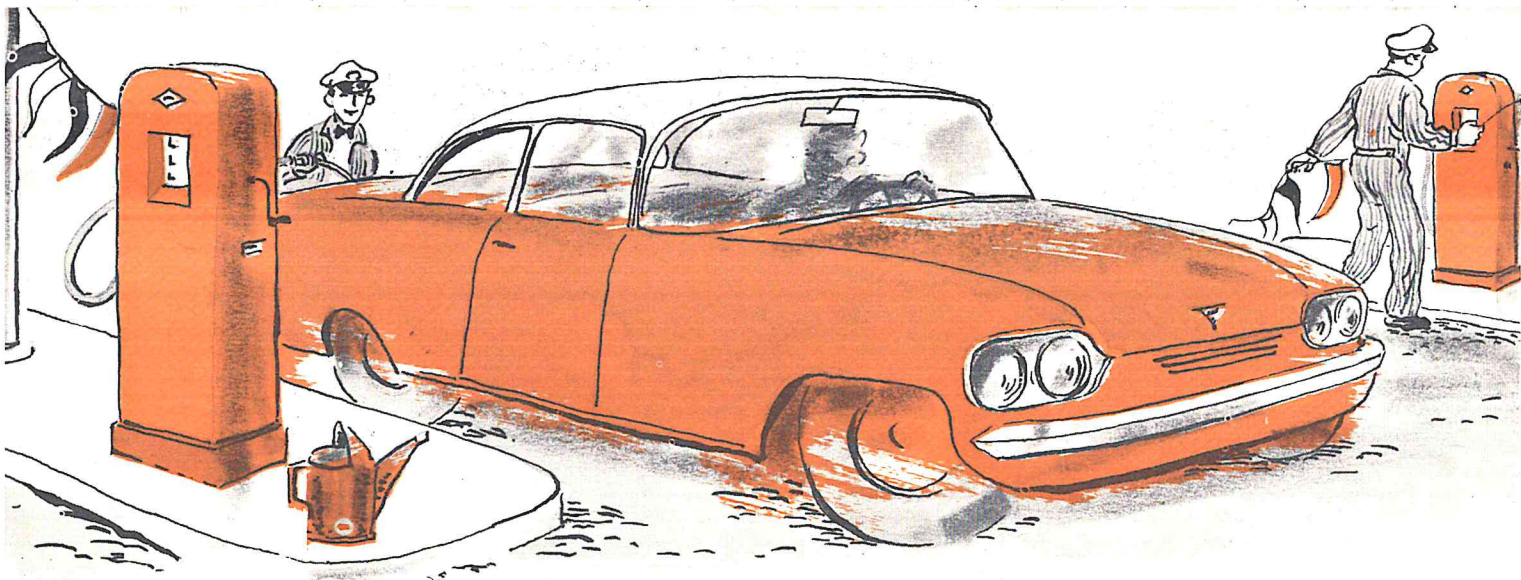
$\begin{array}{r} 18 \\ 14 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 16 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ 12 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 12 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 15 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 17 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ 16 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ 12 \\ \hline \end{array}$
---	---	---	---	---	---	---	---

Work Space

UNIT 3

TOP SCORE: 20 MY SCORE: _____





Lesson 11 — THREE-PLACE MULTIPLICANDS

1. Joe's father is a salesman. He drives 124 miles each week. How many miles does Joe's father drive in 48 weeks? _____

$$\begin{array}{r}
 124 \\
 \times 48 \\
 \hline
 992 \quad (8 \times 124 = 992) \\
 4960 \quad (40 \times 124 = 4960) \\
 \hline
 5952 \qquad \qquad 5952 \\
 48 \times 124 = 5952
 \end{array}$$

3 UNIT

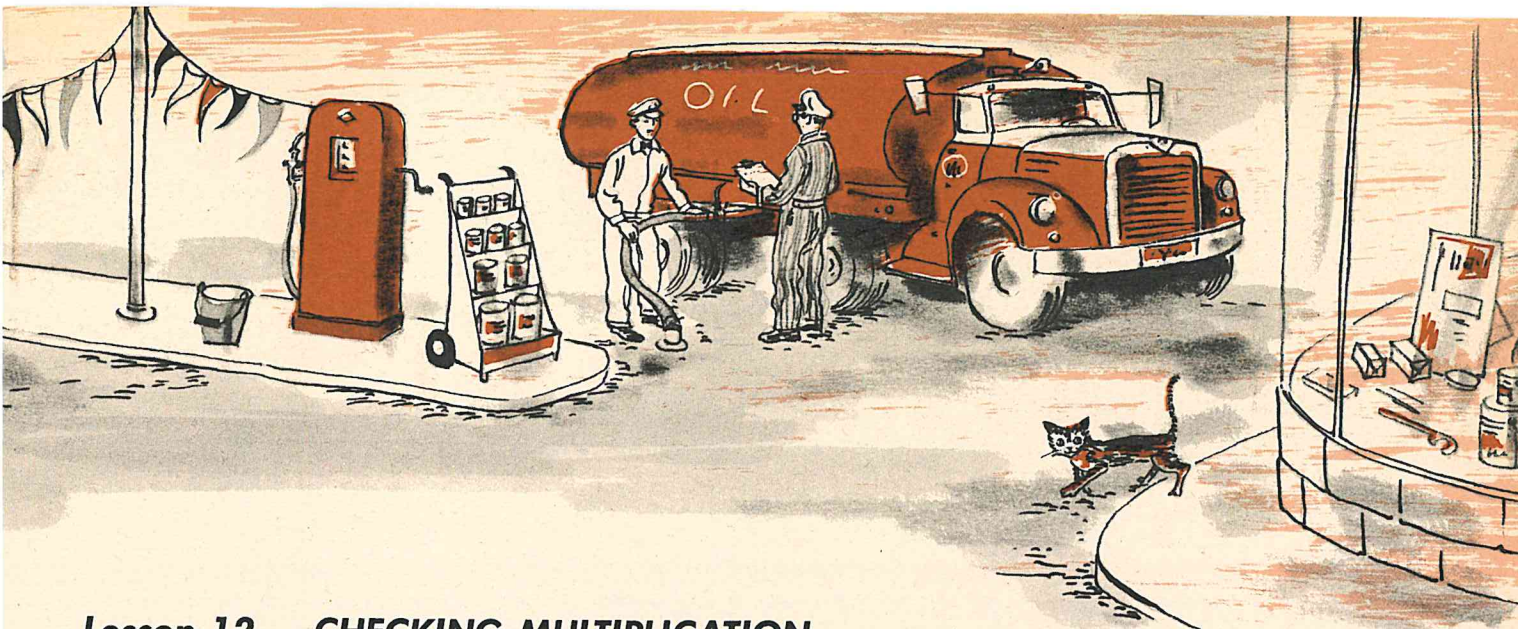
2. Henry's father drives 116 miles each week. How many miles does he drive in 23 weeks? _____

Work Space

3. Bill's father is a salesman in a rural district. He travels 235 miles a day. How many miles does he travel in 24 days? _____

Find the products:

a	b	c	d	e	f	g
4. $\begin{array}{r} 251 \\ \times 29 \\ \hline \end{array}$	$\begin{array}{r} 347 \\ \times 34 \\ \hline \end{array}$	$\begin{array}{r} 168 \\ \times 67 \\ \hline \end{array}$	$\begin{array}{r} 195 \\ \times 51 \\ \hline \end{array}$	$\begin{array}{r} 437 \\ \times 29 \\ \hline \end{array}$	$\begin{array}{r} 287 \\ \times 38 \\ \hline \end{array}$	$\begin{array}{r} 125 \\ \times 43 \\ \hline \end{array}$
5. $\begin{array}{r} 174 \\ \times 64 \\ \hline \end{array}$	$\begin{array}{r} 618 \\ \times 15 \\ \hline \end{array}$	$\begin{array}{r} 125 \\ \times 57 \\ \hline \end{array}$	$\begin{array}{r} 215 \\ \times 16 \\ \hline \end{array}$	$\begin{array}{r} 529 \\ \times 19 \\ \hline \end{array}$	$\begin{array}{r} 618 \\ \times 24 \\ \hline \end{array}$	$\begin{array}{r} 168 \\ \times 39 \\ \hline \end{array}$



Lesson 12 — CHECKING MULTIPLICATION

1. Joe's father drives 28 miles on a gallon of gasoline. How many miles does he drive on 34 gallons? _____

Check your work:

To check the answer, multiply 28×34 . Remember that 28×34 is the same as 34×28 . If 34×28 is 952, then 28×34 should also be 952.

2. On another trip in the same car Joe's father used 38 gallons of gasoline. If he still got 28 miles to the gallon, how far did he go? _____

Multiply and check:

	a	b	c	d	e	f	g	h
3.	$\begin{array}{r} 47 \\ 18 \end{array}$	$\begin{array}{r} 73 \\ 14 \end{array}$	$\begin{array}{r} 24 \\ 16 \end{array}$	$\begin{array}{r} 36 \\ 15 \end{array}$	$\begin{array}{r} 38 \\ 43 \end{array}$	$\begin{array}{r} 36 \\ 27 \end{array}$	$\begin{array}{r} 28 \\ 23 \end{array}$	$\begin{array}{r} 19 \\ 24 \end{array}$
4.	$\begin{array}{r} 25 \\ 53 \end{array}$	$\begin{array}{r} 18 \\ 29 \end{array}$	$\begin{array}{r} 46 \\ 39 \end{array}$	$\begin{array}{r} 37 \\ 29 \end{array}$	$\begin{array}{r} 59 \\ 18 \end{array}$	$\begin{array}{r} 27 \\ 17 \end{array}$	$\begin{array}{r} 38 \\ 26 \end{array}$	$\begin{array}{r} 36 \\ 19 \end{array}$

$$\begin{array}{r} 34 \\ 28 \\ \hline 272 \text{ (} 8 \times 34 = 272 \text{)} \\ 680 \text{ (} 20 \times 34 = 680 \text{)} \\ \hline 952 \end{array}$$

$$\begin{array}{r} 28 \\ 34 \\ \hline 112 \text{ (} 4 \times 28 = 112 \text{)} \\ 840 \text{ (} 30 \times 28 = 840 \text{)} \\ \hline 952 \end{array}$$

Work Space

UNIT 3

Lesson 13 — MULTIPLYING MONEY



1. The boys and girls in the fourth grade sold 37 play tickets at 25 cents each. How much money did they get for the 37 tickets? _____

Dollars and cents are multiplied as other numbers are multiplied. Write a dollar sign and point in the answer.



\$.25
 37

 175
 750

 \$9.25

Work Space

2. They sold 48 children's tickets for 15 cents each. How much money did they get for the 48 children's tickets? _____
3. In the third grade the boys and girls sold 29 tickets for 25 cents each. How much money did they receive for the tickets? _____

3 UNIT

4. The second-grade children had 47 children's tickets to sell. If they sold them all at 15 cents each, how much money would they receive? _____
5. The fifth-grade children sold 58 tickets for 25 cents each. How much money did they get for the 58 tickets? _____

Find the products:

a	b	c	d	e	f	g	h
6. $\begin{array}{r} \$.15 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} \$.26 \\ 27 \\ \hline \end{array}$	$\begin{array}{r} \$.37 \\ 45 \\ \hline \end{array}$	$\begin{array}{r} \$.17 \\ 62 \\ \hline \end{array}$	$\begin{array}{r} \$.48 \\ 19 \\ \hline \end{array}$	$\begin{array}{r} \$.27 \\ 32 \\ \hline \end{array}$	$\begin{array}{r} \$.39 \\ 48 \\ \hline \end{array}$	$\begin{array}{r} \$.78 \\ 29 \\ \hline \end{array}$
7. $\begin{array}{r} \$.83 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} \$.29 \\ 63 \\ \hline \end{array}$	$\begin{array}{r} \$.47 \\ 78 \\ \hline \end{array}$	$\begin{array}{r} \$.95 \\ 79 \\ \hline \end{array}$	$\begin{array}{r} \$.58 \\ 84 \\ \hline \end{array}$	$\begin{array}{r} \$.64 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} \$.63 \\ 97 \\ \hline \end{array}$	$\begin{array}{r} \$.26 \\ 48 \\ \hline \end{array}$

Lesson 14 — PRACTICE

Find the sums:

	a	b	c	d	e	f	g	h	i	j	k	l
1.	$\begin{array}{r} 4 \\ 8 \\ 5 \\ 3 \end{array}$	$\begin{array}{r} 6 \\ 5 \\ 9 \\ 4 \end{array}$	$\begin{array}{r} 4 \\ 3 \\ 0 \\ 6 \end{array}$	$\begin{array}{r} 5 \\ 7 \\ 9 \\ 4 \end{array}$	$\begin{array}{r} 3 \\ 4 \\ 8 \\ 7 \end{array}$	$\begin{array}{r} 4 \\ 0 \\ 9 \\ 8 \end{array}$	$\begin{array}{r} 3 \\ 4 \\ 5 \\ 7 \end{array}$	$\begin{array}{r} 8 \\ 4 \\ 3 \\ 6 \end{array}$	$\begin{array}{r} 2 \\ 5 \\ 8 \\ 5 \end{array}$	$\begin{array}{r} 9 \\ 1 \\ 0 \\ 7 \end{array}$	$\begin{array}{r} 6 \\ 5 \\ 1 \\ 6 \end{array}$	$\begin{array}{r} 5 \\ 2 \\ 7 \\ 6 \end{array}$

	a	b	c	d	e	f	g
2.	$\begin{array}{r} 79 \\ 92 \\ 37 \end{array}$	$\begin{array}{r} 274 \\ 590 \\ 669 \end{array}$	$\begin{array}{r} \$6.45 \\ 8.03 \\ 4.97 \end{array}$	$\begin{array}{r} 45 \\ 14 \\ 30 \end{array}$	$\begin{array}{r} 37 \\ 52 \\ 84 \end{array}$	$\begin{array}{r} 751 \\ 604 \\ 594 \end{array}$	$\begin{array}{r} \$5.96 \\ 1.79 \\ 9.30 \end{array}$

3.	$\begin{array}{r} 3647 \\ 2809 \end{array}$	$\begin{array}{r} 5469 \\ 2531 \end{array}$	$\begin{array}{r} \$75.00 \\ 42.25 \end{array}$	$\begin{array}{r} 8573 \\ 1429 \end{array}$	$\begin{array}{r} 7365 \\ 2489 \end{array}$	$\begin{array}{r} \$25.00 \\ 12.98 \end{array}$	$\begin{array}{r} 9302 \\ 1899 \end{array}$
----	---	---	---	---	---	---	---

Find the differences:

4.	$\begin{array}{r} 83 \\ 29 \end{array}$	$\begin{array}{r} 64 \\ 48 \end{array}$	$\begin{array}{r} 30 \\ 12 \end{array}$	$\begin{array}{r} 43 \\ 10 \end{array}$	$\begin{array}{r} 74 \\ 49 \end{array}$	$\begin{array}{r} 50 \\ 26 \end{array}$	$\begin{array}{r} 84 \\ 20 \end{array}$
----	---	---	---	---	---	---	---

5.	$\begin{array}{r} 374 \\ 267 \end{array}$	$\begin{array}{r} 809 \\ 399 \end{array}$	$\begin{array}{r} 627 \\ 409 \end{array}$	$\begin{array}{r} \$7.30 \\ 2.87 \end{array}$	$\begin{array}{r} 483 \\ 124 \end{array}$	$\begin{array}{r} 384 \\ 194 \end{array}$	$\begin{array}{r} \$7.35 \\ 1.04 \end{array}$
----	---	---	---	---	---	---	---

6.	$\begin{array}{r} 4607 \\ 3026 \end{array}$	$\begin{array}{r} 3027 \\ 1789 \end{array}$	$\begin{array}{r} \$57.60 \\ 19.02 \end{array}$	$\begin{array}{r} 8532 \\ 2074 \end{array}$	$\begin{array}{r} 6047 \\ 4023 \end{array}$	$\begin{array}{r} \$59.00 \\ 17.49 \end{array}$	$\begin{array}{r} \$62.35 \\ 20.78 \end{array}$
----	---	---	---	---	---	---	---

Find the products:

7.	$\begin{array}{r} 76 \\ 8 \end{array}$	$\begin{array}{r} 594 \\ 7 \end{array}$	$\begin{array}{r} \$2.48 \\ 6 \end{array}$	$\begin{array}{r} 28 \\ 9 \end{array}$	$\begin{array}{r} 35 \\ 7 \end{array}$	$\begin{array}{r} 547 \\ 8 \end{array}$	$\begin{array}{r} \$3.56 \\ 6 \end{array}$
----	--	---	--	--	--	---	--

8.	$\begin{array}{r} 29 \\ 23 \end{array}$	$\begin{array}{r} 75 \\ 27 \end{array}$	$\begin{array}{r} 48 \\ 32 \end{array}$	$\begin{array}{r} 76 \\ 54 \end{array}$	$\begin{array}{r} 45 \\ 35 \end{array}$	$\begin{array}{r} 89 \\ 27 \end{array}$	$\begin{array}{r} 37 \\ 46 \end{array}$
----	---	---	---	---	---	---	---

9.	$\begin{array}{r} 236 \\ 29 \end{array}$	$\begin{array}{r} 178 \\ 38 \end{array}$	$\begin{array}{r} 129 \\ 47 \end{array}$	$\begin{array}{r} 273 \\ 37 \end{array}$	$\begin{array}{r} 485 \\ 49 \end{array}$	$\begin{array}{r} 196 \\ 52 \end{array}$	$\begin{array}{r} 437 \\ 48 \end{array}$
----	--	--	--	--	--	--	--

UNIT 3

Lesson 15 — READING A THERMOMETER

A thermometer is used to measure temperature. When the weather gets colder, the liquid drops lower. When it gets hotter, the liquid goes higher. The freezing point is 32 degrees above zero.

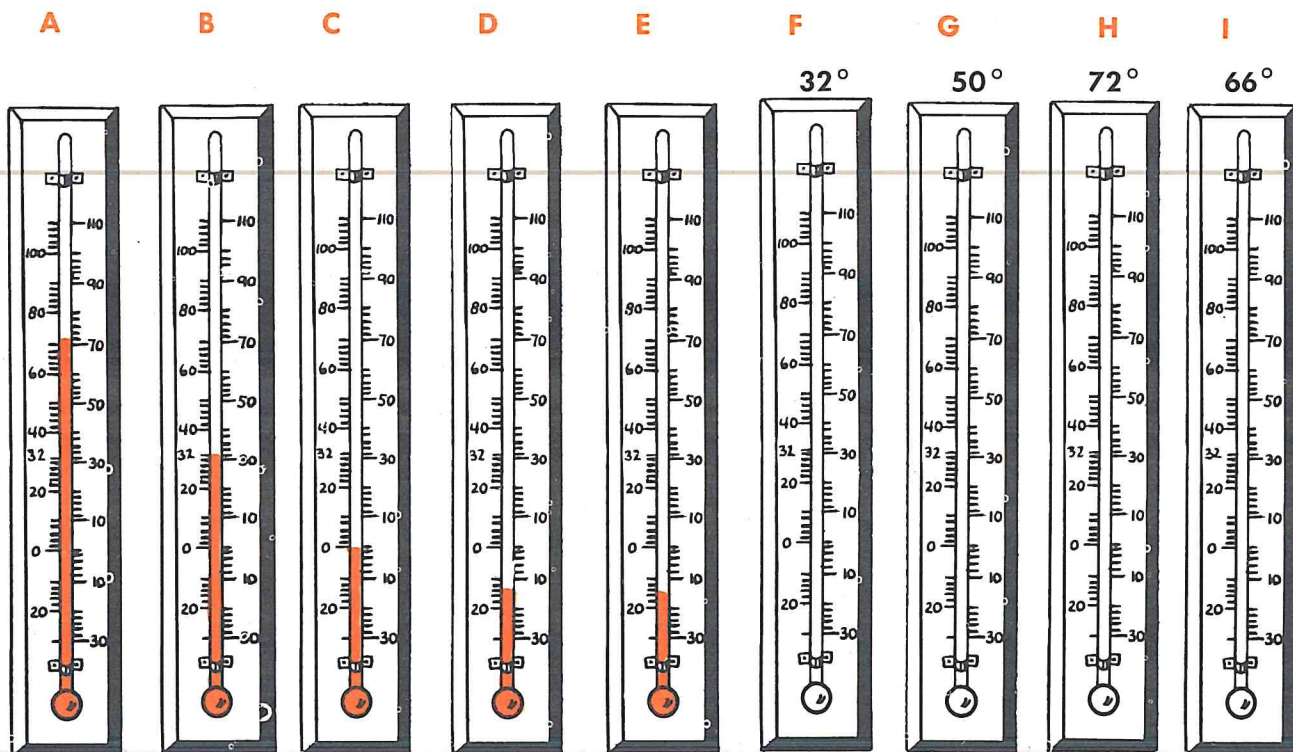
The thermometers on this page are marked off in units of 2 degrees. Thermometer **B** in the picture below shows the freezing point. It is written **32°**. The little ° written by the 32 means **degrees**.

Thermometer **C** below shows zero temperature. Thermometer **D** shows a temperature below zero. It is read **14 degrees below zero**. This is written **-14°**. It shows that the temperature is 14° lower than 0.

1. Which thermometer shows 72°, a good room temperature? _____
2. Which thermometer shows 32°, the freezing point? _____
3. Which thermometers show temperatures of below zero? _____
4. Which thermometer shows the coldest temperature? _____
the warmest? _____

3 UNIT

5. What is the difference between them? _____
6. Shade the glass tubes in thermometers **F**, **G**, **H**, and **I** to show the temperatures written above each one.



Lesson 16 — MORE ABOUT THERMOMETERS

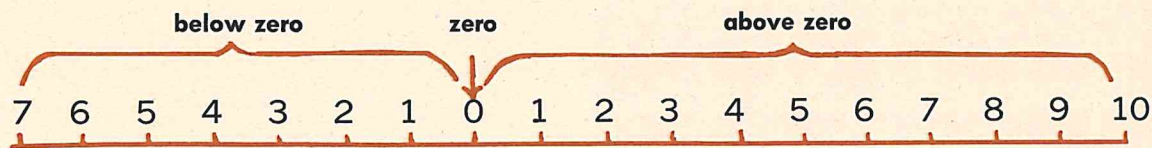
1. The outdoor temperature was 40° at noon. At four o'clock the temperature had dropped 12° . What was the temperature at four o'clock? _____
2. The high temperature for the day was 50° and the low was 22° . Find the difference between the high and the low temperatures. Count from 50° to 22° . To find the answer without counting, do you add or subtract? _____
3. Joan's grandmother wrote that the high temperature in Cedarville was 2° below zero and the low was 8° below. What was the difference between the high and the low temperatures? Count from 2° below zero to 8° below. To find the answer without counting, do you add or subtract? _____
4. Ann visited her aunt over the weekend. The high temperature was 9° above zero and the low 3° below zero. What was the difference between the high and low temperatures? _____
5. Find 9° above zero and 3° below zero on the thermometer. Count from 9° above to 3° below zero. To find the answer without counting, do you add or subtract? _____
6. Water boils at 212° and freezes at 32° . What is the difference between these temperatures? _____

Find the differences between these temperatures. Use the number line or thermometer to check your work:

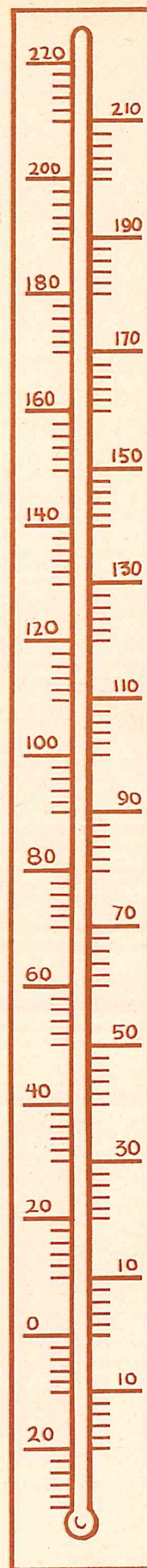
a

b

- | | |
|--|--|
| 7. 10 below zero and 2 above zero _____ $^{\circ}$ | 8 below zero and 12 above _____ $^{\circ}$ |
| 8. 10 above zero and 15 above _____ $^{\circ}$ | 3 above zero and 9 above _____ $^{\circ}$ |
| 9. 7 below zero and 1 below _____ $^{\circ}$ | 9 below zero and 3 below _____ $^{\circ}$ |
| 10. 4 below zero and 22 above _____ $^{\circ}$ | 6 below zero and 10 above _____ $^{\circ}$ |



TOP SCORE: 14 MY SCORE: _____



Lesson 17 — MONTHS OF THE YEAR

Thirty days have September,
April, June, and November;
All the rest have thirty-one,
But February which alone,
Has but twenty-eight, in fine,
Till leap year gives it twenty-nine.

1. This year is _____.
2. Next year will be _____.
3. Last year was _____.
4. My birthday is _____.

	Months	Abbreviation	Number of Days
1.	January	Jan.	31 days
2.	February	Feb.	28 or 29
3.	March	Mar.	31
4.	April	Apr.	30
5.	May		31
6.	June		30
7.	July		31
8.	August	Aug.	31
9.	September	Sept.	30
10.	October	Oct.	31
11.	November	Nov.	30
12.	December	Dec.	31

5. **Count the months:** There are ____ months in a year.
6. **Circle the name of your birth month on the chart above:**
7. The abbreviations for the names of the months with short names are not often used. What three months have the shortest names?

3 UNIT

8. **a.** How many months have 31 days? ____ **b.** Name them:

9. **a.** How many months have 30 days? ____ **b.** Name them:

10. **Write the name of the shortest month:** _____

11. **Make a calendar for this month:**

Month _____		Year _____				
Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.

Dates are often written in a short way. October 12, 1962, is written: 10/ 12/ 62.
(Month) (Day) (Year)

12. **Write these dates a short way:**

- a** February 22, 1964 _____
- b** June 12, 1963 _____
- c** December 25, 1965 _____

Lesson 18 — READING GRAPHS



Graphs are used to show comparison of facts. This bar graph shows the number of books read by two boys and two girls this month.

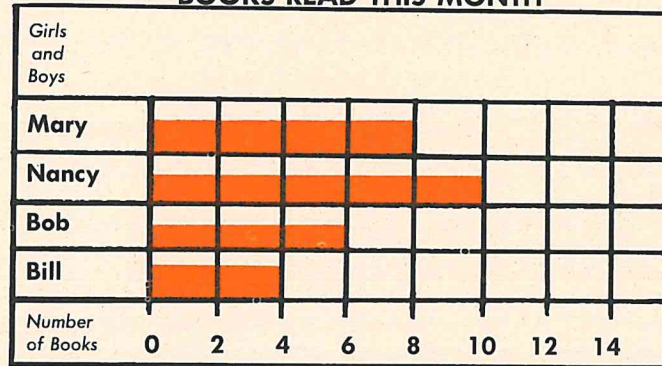
1. How many books:

- a did Mary read? _____
- b did Nancy read? _____
- c did Bob read? _____
- d did Bill read? _____

Who read:

- e the most books? _____
- f the fewest books? _____
- g twice as many as Bill? _____

BOOKS READ THIS MONTH

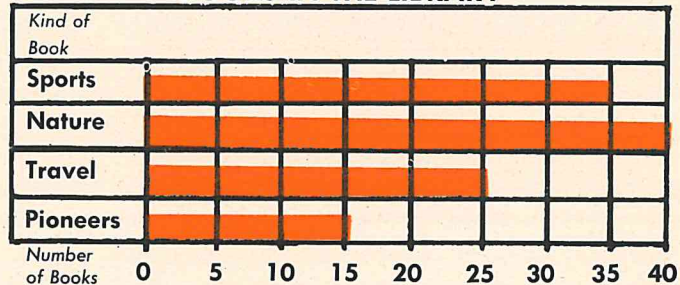


2. This graph shows the number of four kinds of books in the library.

How many books in the library:

- a about sports? _____
- b about nature? _____
- c about travel? _____
- d about pioneers? _____
- e How many more stories are there about nature than about travel? _____

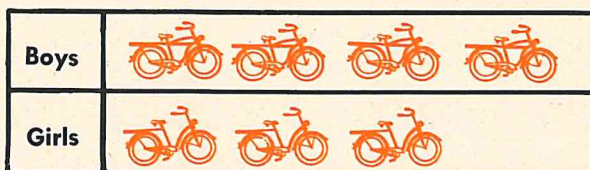
BOOKS IN THE LIBRARY



UNIT 3

3. Pictures or symbols are used in pictographs to illustrate facts. These pictures make the graph interesting and easy to read. Each symbol or picture represents a certain number of things.

NUMBER OF FOURTH GRADERS OWNING BICYCLES



Each  represents 3 bicycle owners.

How many:

- a boys own bicycles? _____
- b girls own bicycles? _____
- c pupils own bicycles? _____
- d more boys than girls own bicycles? _____

Lesson 19 — CHARTS AND GRAPHS

1. Miss Parks made a chart showing the number of members and the amount of money each grade collected for the Junior Red Cross. The first grade, with 32 members, had \$2.63; the second grade, with 29 members, had \$2.57; the third grade, with 30 members, had \$3.16; the fourth grade, with 25 members, had \$3.09; the fifth grade, with 28 members, had \$2.69; the sixth grade, with 31 members, had \$3.28.

a Write these numbers on the chart:

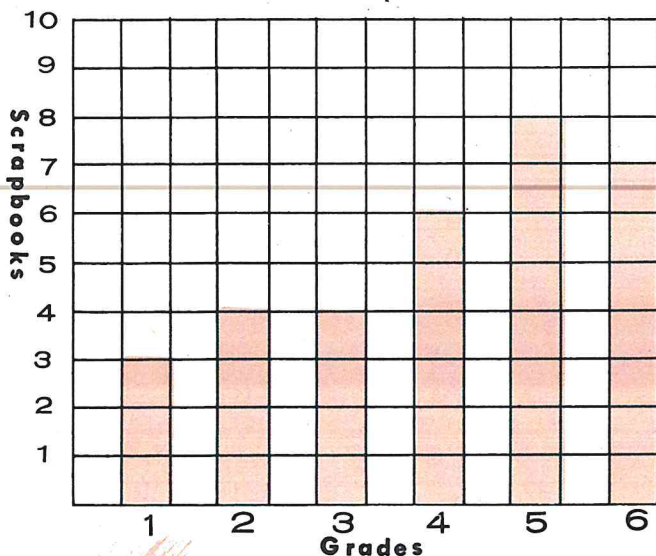
GRADE	MONEY	MEMBERS
First		
Second		
Third		
Fourth		
Fifth		
Sixth		
Total		

Write the name of the grade that had:

- b The most members _____
 c The fewest members _____
 d The most money _____
 e The least money _____
 f Total number of members _____
 g Total amount of money _____

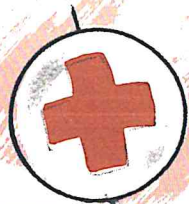
3 UNIT

2. The graph shows the number of scrapbooks the Junior Red Cross members made last year to send to hospitals.

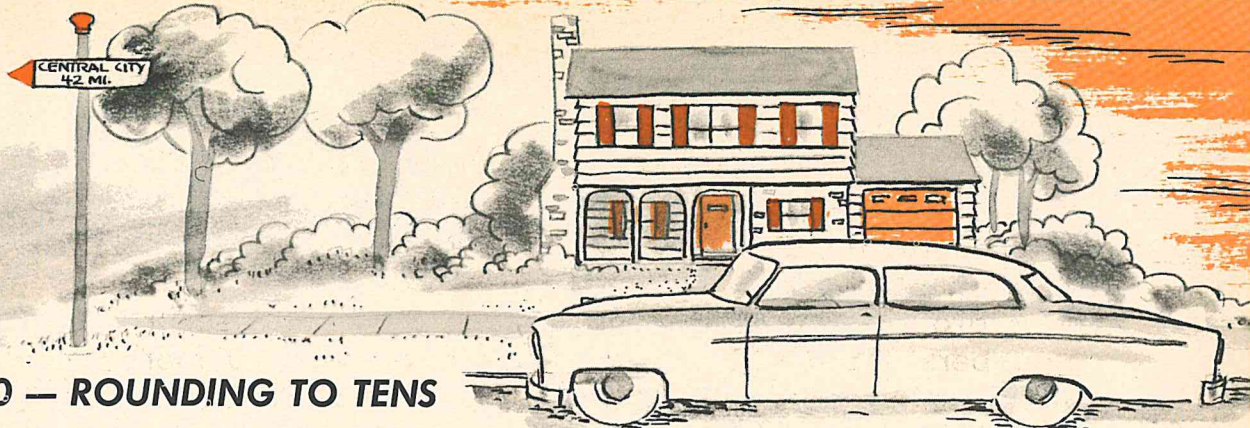


Write the number of scrapbooks made by:

- a First grade _____
 b Second grade _____
 c Third grade _____
 d Fourth grade _____
 e Fifth grade _____
 f Sixth grade _____



- g Which grade made the most? _____
 h Which grade made the fewest? _____
 i Which grades made the same number? _____
 j What was the total number of scrapbooks? _____



Lesson 20 — ROUNDING TO TENS

Mary said it was about 50 miles to her grandmother's house. It was actually 48 miles. Mary gave an estimate of the distance to the nearest ten miles. This is called "rounding to the nearest ten." 48 miles is closer to 50 than 48 is to 40. 50 is the "nearest ten" to 48.

When numbers do not have to be given exactly, it is often useful to round them to the nearest ten.

1. The actual distance to Bob's grandmother's home is 42 miles. Is 42 nearer to 40 or to 50? ____

Bob could say the distance from his home to his grandmother's home is about ____ miles.

2. Round these numbers to the nearest ten. Check your answers on the number line:

a	b	c	d	e	f	g	h
81 ____	87 ____	84 ____	89 ____	82 ____	83 ____	86 ____	88 ____



85 is halfway between 80 and 90, and is rounded to 90.

3. Round these numbers to the right ten:

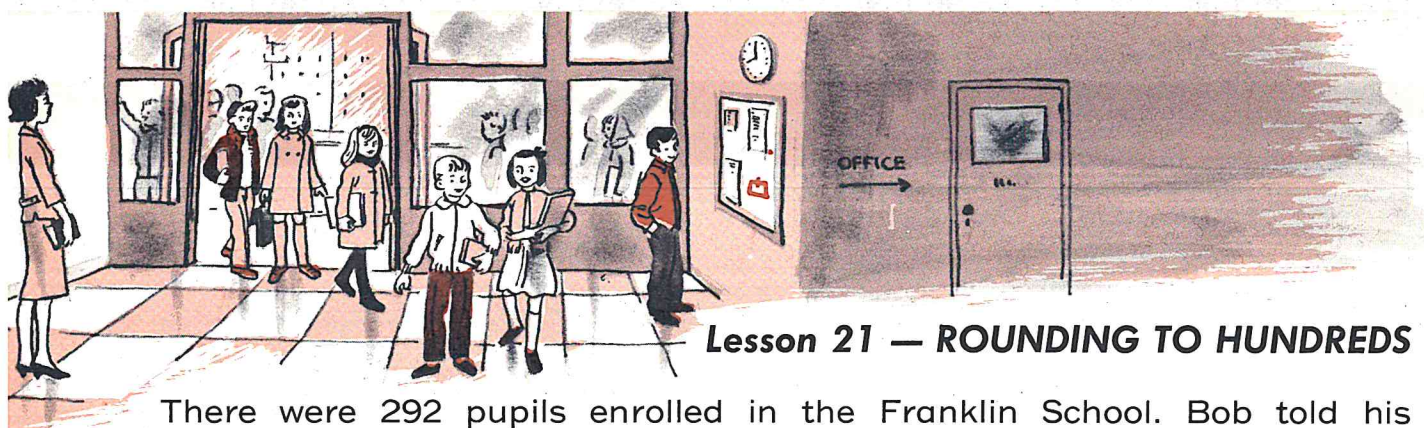
a	b	c	d	e	f
65 ____	45 ____	25 ____	35 ____	55 ____	75 ____

Numbers that end in 1, 2, 3, or 4 are rounded **down** to the nearest ten. Example: 41, 42, 43, and 44 are rounded to 40.

Numbers that end in 5, 6, 7, 8, or 9 are rounded **up** to the nearest ten. Example: 45, 46, 47, 48, and 49 are rounded to 50.

Round each number to the nearest 10:

- | | | | | | |
|------------|----------|----------|----------|----------|----------|
| a | b | c | d | e | f |
| 4. 22 ____ | 46 ____ | 53 ____ | 79 ____ | 38 ____ | 61 ____ |
| 5. 89 ____ | 35 ____ | 64 ____ | 77 ____ | 83 ____ | 26 ____ |



Lesson 21 — ROUNDING TO HUNDREDS

There were 292 pupils enrolled in the Franklin School. Bob told his cousin there were about 300 pupils in the school.

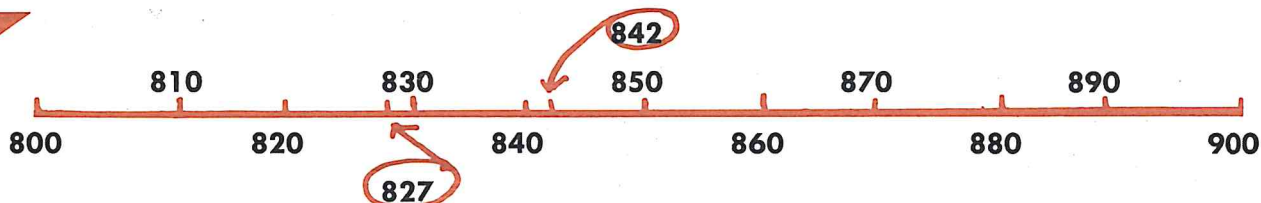
Often 3-place numbers are rounded to the nearest hundred when an exact number is not needed.

1. Jim wrote that the exact enrollment of his school was 410 pupils. Is 410 nearer to 400 or 500? ____ The enrollment is about ____ pupils.

Round these numbers to the nearest hundred. Check your answer on the number line:

- a b c d e f
2. 890 ____ 830 ____ 810 ____ 870 ____ 880 ____ 842 ____
3. 860 ____ 827 ____ 817 ____ 820 ____ 833 ____ 875 ____

3 UNIT



850 is halfway between 800 and 900, and is rounded to 900.

4. 650 is halfway between ____ and ____, and is rounded to ____.
5. 250 is halfway between ____ and ____, and is rounded to ____.
6. 450 is halfway between ____ and ____, and is rounded to ____.

In rounding a 3-place number to hundreds, watch only the tens' place. If the number in the tens' place is 0, 1, 2, 3, or 4, the number is rounded **down** to the nearest hundred. Examples: 209, 212, 224, 238, and 242 are rounded to 200. If the number in the tens' place is 5, 6, 7, 8, or 9, the number is rounded **up** to the nearest hundred. Examples: 253, 269, 274, 285, and 291 are rounded to 300.

Round these numbers to the nearest hundred:

- a b c d e f
7. 435 ____ 597 ____ 763 ____ 842 ____ 958 ____ 203 ____
8. 374 ____ 686 ____ 418 ____ 183 ____ 489 ____ 748 ____

Lesson 22 — ESTIMATING TO FIND THE ANSWER

Three estimated answers are given for each problem. Draw a ring around the one you think is the most reasonable. This is your estimate. Then work the problem to get the exact answer:

1. There are 145 boys and 165 girls in the Emerson School. How many children attend the school? One way to estimate is to round each number to the nearest hundred.

Estimate	Work
100	145
<u>200</u>	<u>165</u>

A reasonable estimate is:
200 300 400

_____ children attend Emerson School.

2. Jerry spent \$1.25 for a collar, \$.59 for a toy, and \$2.00 for a license for his dog. Find how much Jerry spent.

Estimate	Work
----------	------

A reasonable estimate is: \$3 \$4 \$5

Jerry spent _____.

3. Jack paid \$1.99 for a shirt and 4 times as much for shoes. Find how much he paid for the shoes.

Estimate	Work
----------	------

A reasonable estimate is: \$6 \$7 \$8

Jack paid _____ for the shoes.

4. Mike's new scooter cost \$59.95 and Bill's scooter cost \$40.25. Find how much more Mike's scooter cost than Bill's. You can estimate by rounding the numbers to the nearest ten dollars.

Estimate	Work
\$60	\$59.95
<u>-40</u>	<u>-40.25</u>

A reasonable estimate is:
\$20 \$30 \$40

Mike's scooter cost _____ more than Bill's.

UNIT 3



Three estimated answers are given for each problem. Draw a ring around the one you think is the most reasonable. Then work the problem to get the exact answer. Use the symbol “is greater than” $>$ or “is less than” $<$ to compare your estimate with the exact answer.

- [illegible]

Estimate	Exact answer
----------	--------------

- | <i>Estimate</i> | <i>Exact answer</i> |
|------------------------------------|------------------------------------|
| $\frac{1}{2}$ | $\frac{1}{2}$ |
| $\frac{1}{4}$ | $\frac{1}{4}$ |
| $\frac{1}{8}$ | $\frac{1}{8}$ |
| $\frac{1}{16}$ | $\frac{1}{16}$ |
| $\frac{1}{32}$ | $\frac{1}{32}$ |
| $\frac{1}{64}$ | $\frac{1}{64}$ |
| $\frac{1}{128}$ | $\frac{1}{128}$ |
| $\frac{1}{256}$ | $\frac{1}{256}$ |
| $\frac{1}{512}$ | $\frac{1}{512}$ |
| $\frac{1}{1024}$ | $\frac{1}{1024}$ |
| $\frac{1}{2048}$ | $\frac{1}{2048}$ |
| $\frac{1}{4096}$ | $\frac{1}{4096}$ |
| $\frac{1}{8192}$ | $\frac{1}{8192}$ |
| $\frac{1}{16384}$ | $\frac{1}{16384}$ |
| $\frac{1}{32768}$ | $\frac{1}{32768}$ |
| $\frac{1}{65536}$ | $\frac{1}{65536}$ |
| $\frac{1}{131072}$ | $\frac{1}{131072}$ |
| $\frac{1}{262144}$ | $\frac{1}{262144}$ |
| $\frac{1}{524288}$ | $\frac{1}{524288}$ |
| $\frac{1}{1048576}$ | $\frac{1}{1048576}$ |
| $\frac{1}{2097152}$ | $\frac{1}{2097152}$ |
| $\frac{1}{4194304}$ | $\frac{1}{4194304}$ |
| $\frac{1}{8388608}$ | $\frac{1}{8388608}$ |
| $\frac{1}{16777216}$ | $\frac{1}{16777216}$ |
| $\frac{1}{33554432}$ | $\frac{1}{33554432}$ |
| $\frac{1}{67108864}$ | $\frac{1}{67108864}$ |
| $\frac{1}{134217728}$ | $\frac{1}{134217728}$ |
| $\frac{1}{268435456}$ | $\frac{1}{268435456}$ |
| $\frac{1}{536870912}$ | $\frac{1}{536870912}$ |
| $\frac{1}{1073741824}$ | $\frac{1}{1073741824}$ |
| $\frac{1}{2147483648}$ | $\frac{1}{2147483648}$ |
| $\frac{1}{4294967296}$ | $\frac{1}{4294967296}$ |
| $\frac{1}{8589934592}$ | $\frac{1}{8589934592}$ |
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| $\frac{1}{68719476736}$ | $\frac{1}{68719476736}$ |
| $\frac{1}{137438953472}$ | $\frac{1}{137438953472}$ |
| $\frac{1}{274877906944}$ | $\frac{1}{274877906944}$ |
| $\frac{1}{549755813888}$ | $\frac{1}{549755813888}$ |
| $\frac{1}{1099511627776}$ | $\frac{1}{1099511627776}$ |
| $\frac{1}{2199023255552}$ | $\frac{1}{2199023255552}$ |
| $\frac{1}{4398046511104}$ | $\frac{1}{4398046511104}$ |
| $\frac{1}{8796093022208}$ | $\frac{1}{8796093022208}$ |
| $\frac{1}{17592186044416}$ | $\frac{1}{17592186044416}$ |
| $\frac{1}{35184372088832}$ | $\frac{1}{35184372088832}$ |
| $\frac{1}{70368744177664}$ | $\frac{1}{70368744177664}$ |
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| $\frac{1}{281474976710656}$ | $\frac{1}{281474976710656}$ |
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| $\frac{1}{1125899906842624}$ | $\frac{1}{1125899906842624}$ |
| $\frac{1}{2251799813685248}$ | $\frac{1}{2251799813685248}$ |
| $\frac{1}{4503599627370496}$ | $\frac{1}{4503599627370496}$ |
| $\frac{1}{9007199254740992}$ | $\frac{1}{9007199254740992}$ |
| $\frac{1}{18014398509481984}$ | $\frac{1}{18014398509481984}$ |
| $\frac{1}{36028797018963968}$ | $\frac{1}{36028797018963968}$ |
| $\frac{1}{72057594037927936}$ | $\frac{1}{72057594037927936}$ |
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| $\frac{1}{288230376151711744}$ | $\frac{1}{288230376151711744}$ |
| $\frac{1}{576460752303423488}$ | $\frac{1}{576460752303423488}$ |
| $\frac{1}{1152921504606846976}$ | $\frac{1}{1152921504606846976}$ |
| $\frac{1}{2305843009213693952}$ | $\frac{1}{2305843009213693952}$ |
| $\frac{1}{4611686018427387904}$ | $\frac{1}{4611686018427387904}$ |
| $\frac{1}{9223372036854775808}$ | $\frac{1}{9223372036854775808}$ |
| $\frac{1}{18446744073709551616}$ | $\frac{1}{18446744073709551616}$ |
| $\frac{1}{36893488147419103232}$ | $\frac{1}{36893488147419103232}$ |
| $\frac{1}{73786976294838206464}$ | $\frac{1}{73786976294838206464}$ |
| $\frac{1}{147573952589676412928}$ | $\frac{1}{147573952589676412928}$ |
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| $\frac{1}{590295810358705651712}$ | $\frac{1}{590295810358705651712}$ |
| $\frac{1}{1180591620717411303424}$ | $\frac{1}{1180591620717411303424}$ |
| $\frac{1}{23611832$ | |

[illegible]

- | <i>Estimate</i> | <i>Exact answer</i> |
|------------------------|----------------------------|
| | |

- | Estimate | Exact answer |
|----------|--------------|
|----------|--------------|

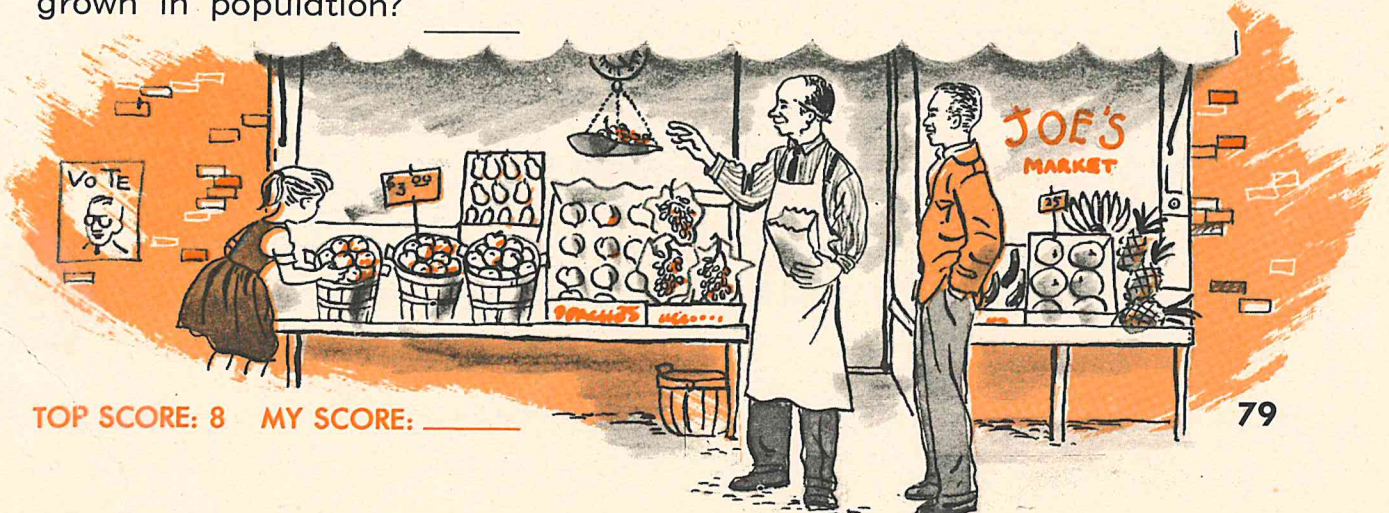
- | Estimate | Exact answer |
|----------|--------------|
|----------|--------------|

Lesson 24 — NUMBER STORIES

Work Space

1. Mr. King drove 225 miles to Cedarville and 209 miles in Cedarville. He drove home by another road which was 237 miles. How many miles did he drive? _____
2. The car ran 18 miles on a gallon of gasoline. At this rate how many miles did it run on 37 gallons of gasoline? _____
3. It is only 225 miles to Cedarville. It is 406 miles to Silver Lake. How much farther is it to Silver Lake than to Cedarville? _____
4. Mr. King bought 14 gallons of gasoline at \$.39 a gallon. How much did he pay for the 14 gallons? _____
5. In a market Joan saw baskets of apples for \$3 a basket. How many baskets of apples could be bought for \$27? _____
6. Mr. King bought apples for \$3.00, some grapes for \$.78, peaches for \$2.05, and pears for \$1.29. How much did Mr. King spend for fruit? _____
7. Bill found that there were 105 apples in a basket. If there were 105 apples in each basket, how many would there be in 36 baskets? _____
8. Cedarville has a population of 23,108. Ten years ago the population was 21,090. How much has Cedarville grown in population? _____

UNIT 3



TOP SCORE: 8 MY SCORE: _____

Lesson 25 — REVIEW

1. There are 27 pupils in a third-grade room, 24 in a fourth-grade room, and 31 in a fifth-grade room. Find a reasonable estimate of the number of pupils in the three rooms. Then find the exact number.

A reasonable estimate is about: 70 80 90

There are _____ pupils in the three rooms.

2. John has 68 United States stamps, and 7 times as many stamps from foreign countries. Find a reasonable estimate of the number of foreign stamps that John has. Then find the exact number.

A reasonable estimate is about: 420 490 550

John has _____ stamps from foreign countries.

Estimate Work

Find the products:

3. $\begin{array}{r} \text{a} \\ 37 \\ \underline{2} \end{array}$ $\begin{array}{r} \text{b} \\ 420 \\ \underline{6} \end{array}$ $\begin{array}{r} \text{c} \\ 629 \\ \underline{8} \end{array}$ $\begin{array}{r} \text{d} \\ 503 \\ \underline{7} \end{array}$ $\begin{array}{r} \text{e} \\ 328 \\ \underline{5} \end{array}$ $\begin{array}{r} \text{f} \\ 782 \\ \underline{9} \end{array}$ $\begin{array}{r} \text{g} \\ 509 \\ \underline{8} \end{array}$

4. $\begin{array}{r} 24 \\ \underline{36} \end{array}$ $\begin{array}{r} 40 \\ \underline{27} \end{array}$ $\begin{array}{r} 65 \\ \underline{30} \end{array}$ $\begin{array}{r} 278 \\ \underline{23} \end{array}$ $\begin{array}{r} 438 \\ \underline{79} \end{array}$ $\begin{array}{r} 248 \\ \underline{83} \end{array}$ $\begin{array}{r} 582 \\ \underline{19} \end{array}$

5. $\begin{array}{r} \$2.89 \\ \underline{3} \end{array}$ $\begin{array}{r} \$49 \\ \underline{5} \end{array}$ $\begin{array}{r} \$6.33 \\ \underline{8} \end{array}$ $\begin{array}{r} \$9.10 \\ \underline{6} \end{array}$ $\begin{array}{r} \$7.09 \\ \underline{7} \end{array}$ $\begin{array}{r} \$6.43 \\ \underline{4} \end{array}$ $\begin{array}{r} \$2.06 \\ \underline{9} \end{array}$

6. $\begin{array}{r} \$24 \\ \underline{82} \end{array}$ $\begin{array}{r} \$65 \\ \underline{40} \end{array}$ $\begin{array}{r} \$80 \\ \underline{28} \end{array}$ $\begin{array}{r} \$93 \\ \underline{19} \end{array}$ $\begin{array}{r} \$73 \\ \underline{47} \end{array}$ $\begin{array}{r} \$42 \\ \underline{45} \end{array}$ $\begin{array}{r} \$58 \\ \underline{37} \end{array}$

7. Find the sums:

$\begin{array}{r} \text{a} \\ 280 \\ \underline{429} \end{array}$ $\begin{array}{r} \text{b} \\ 4287 \\ \underline{3059} \end{array}$ $\begin{array}{r} \text{c} \\ \$3.73 \\ \underline{.78} \\ 4.29 \end{array}$ $\begin{array}{r} \text{d} \\ 403 \\ \underline{87} \\ 385 \end{array}$

8. Find the differences:

$\begin{array}{r} \text{a} \\ 400 \\ \underline{289} \end{array}$ $\begin{array}{r} \text{b} \\ 5782 \\ \underline{1098} \end{array}$ $\begin{array}{r} \text{c} \\ \$7.03 \\ \underline{4.78} \end{array}$

Lesson 26 — TEST YOURSELF

1. Bob's school had 505 pupils, but there were only 398 pupils in Jim's school. Find how many more pupils there were in Bob's school than in Jim's.

A reasonable estimate is about: 90 100 200
Bob's school had _____ more pupils than Jim's.

2. Bill collects coins and has 21 coins from foreign countries. He has 5 times as many United States coins. Find the number of U.S. coins he has:

A reasonable estimate is about: 100 120 150
Bill has _____ United States coins.

Estimate Work

Find the products:

	a	b	c	d	e	f	g
3.	$\begin{array}{r} 43 \\ 5 \end{array}$	$\begin{array}{r} 60 \\ 8 \end{array}$	$\begin{array}{r} 402 \\ 7 \end{array}$	$\begin{array}{r} 633 \\ 4 \end{array}$	$\begin{array}{r} 582 \\ 9 \end{array}$	$\begin{array}{r} 729 \\ 4 \end{array}$	$\begin{array}{r} 822 \\ 3 \end{array}$

4.	$\begin{array}{r} 78 \\ 32 \end{array}$	$\begin{array}{r} 80 \\ 25 \end{array}$	$\begin{array}{r} 68 \\ 20 \end{array}$	$\begin{array}{r} 597 \\ 73 \end{array}$	$\begin{array}{r} 627 \\ 52 \end{array}$	$\begin{array}{r} 703 \\ 38 \end{array}$	$\begin{array}{r} 840 \\ 25 \end{array}$
----	---	---	---	--	--	--	--

5.	$\begin{array}{r} \$2.62 \\ 2 \end{array}$	$\begin{array}{r} \$.63 \\ 8 \end{array}$	$\begin{array}{r} \$.80 \\ 4 \end{array}$	$\begin{array}{r} \$4.25 \\ 7 \end{array}$	$\begin{array}{r} \$6.09 \\ 9 \end{array}$	$\begin{array}{r} \$7.90 \\ 6 \end{array}$	$\begin{array}{r} \$8.29 \\ 5 \end{array}$
----	--	---	---	--	--	--	--

6.	$\begin{array}{r} \$.28 \\ 63 \end{array}$	$\begin{array}{r} \$.67 \\ 25 \end{array}$	$\begin{array}{r} \$.85 \\ 26 \end{array}$	$\begin{array}{r} \$.30 \\ 35 \end{array}$	$\begin{array}{r} \$.48 \\ 20 \end{array}$	$\begin{array}{r} \$.75 \\ 27 \end{array}$	$\begin{array}{r} \$.85 \\ 69 \end{array}$
----	--	--	--	--	--	--	--

UNIT 3

7. Find the differences:

a	b	c	d
$\begin{array}{r} 605 \\ 287 \end{array}$	$\begin{array}{r} 928 \\ 419 \end{array}$	$\begin{array}{r} 6208 \\ 3073 \end{array}$	$\begin{array}{r} \$6.87 \\ 2.99 \end{array}$

8. Find the sums:

a	b	c
$\begin{array}{r} 682 \\ 118 \end{array}$	$\begin{array}{r} 4920 \\ 3097 \end{array}$	$\begin{array}{r} \$7.82 \\ 1.93 \end{array}$

TOP SCORE: 39 MY SCORE: _____

Lesson 27 — PRACTICE TEST -- FIRST SEMESTER

1. Joan spent \$9.75 for a play suit and a pair of shoes. The play suit cost \$5.78. How much did the shoes cost? _____

Work Space

2. Eric had \$4.85 in his bank. He put \$1.59 more in his bank. How much did he have in his bank then? _____

3. Ray has 78 pictures in his scrapbook. Tom has 2 times as many in his book. How many pictures does Tom have? _____

Work Space

4. On each of 5 afternoons after school Mary earned \$.45 baby sitting. How much did she earn altogether? _____

Write the missing numbers:

a
5. $6 \times \underline{\hspace{1cm}} = 54$

b
 $42 \div \underline{\hspace{1cm}} = 6$

c
 $4 \times \underline{\hspace{1cm}} = 28$

d
 $63 \div \underline{\hspace{1cm}} = 9$

3 UNIT 6. $8 + \underline{\hspace{1cm}} = 15$

$14 - \underline{\hspace{1cm}} = 8$

$9 + \underline{\hspace{1cm}} = 16$

$17 - \underline{\hspace{1cm}} = 9$

Use the symbols $>$ and $<$ to compare the numbers in each pair:

a
7. $4526 \underline{\hspace{1cm}} 4625$

b
 $3780 \underline{\hspace{1cm}} 3908$

c
 $5709 \underline{\hspace{1cm}} 5907$

d
 $6000 \underline{\hspace{1cm}} 6239$

Find the quotients:

a
8. $6 \overline{)54}$

b
 $9 \overline{)72}$

c
 $8 \overline{)64}$

d
 $7 \overline{)42}$

e
 $5 \overline{)40}$

f
 $4 \overline{)28}$

9. Use each set of numbers to write 2 multiplication facts and 2 division facts:

6, 8, 48

4, 9, 36

11. Find the products:

a
 $\begin{array}{r} 159 \\ \times 6 \\ \hline \end{array}$

b
 $\begin{array}{r} \$1.64 \\ \times 27 \\ \hline \end{array}$

c
 $\begin{array}{r} 379 \\ \times 5 \\ \hline \end{array}$

d
 $\begin{array}{r} 483 \\ \times 24 \\ \hline \end{array}$

10. Find the sums:

a
 $\begin{array}{r} 275 \\ 252 \\ 155 \\ \hline \end{array}$

b
 $\begin{array}{r} 174 \\ 239 \\ 146 \\ \hline \end{array}$

c
 $\begin{array}{r} \$5.25 \\ 3.69 \\ 1.87 \\ \hline \end{array}$

d
 $\begin{array}{r} 4563 \\ 2079 \\ \hline \end{array}$

12. Find the differences:

a
 $\begin{array}{r} 560 \\ - 276 \\ \hline \end{array}$

b
 $\begin{array}{r} 8806 \\ - 3495 \\ \hline \end{array}$

c
 $\begin{array}{r} \$6.15 \\ - 2.98 \\ \hline \end{array}$

d
 $\begin{array}{r} \$9.50 \\ - 2.75 \\ \hline \end{array}$

Lesson 1 — DIVIDING TWO-PLACE NUMBERS

1. Mary has 45 pictures to paste in her scrapbook. If she puts 3 pictures on each page, how many pages will she need for the 45 pictures? ____

To find how many pages she will need, divide 45 by 3.

A long way to divide 45 by 3 is to start with 45 and subtract 3 as many times as possible. Then count the number of times you subtracted 3. This will show how many 3's there are in 45. A faster way is to subtract more than one 3 at a time.

$$\begin{array}{r} 5 \\ 10 \end{array} \left. \vphantom{\begin{array}{r} 5 \\ 10 \end{array}} \right\} 15$$

$$\begin{array}{r} 3 \overline{) 45} \\ \underline{30} = 10 \times 3 \\ 15 \\ \underline{15} = 5 \times 3 \\ 0 \end{array}$$

1. See how many 3's you can subtract at once.
See if you can subtract 10 threes all at once. $10 \times 3 = 30$.
You can subtract 30 from 45, because $30 < 45$.

2. The 10 is a part of the quotient and it is written above the line. The 30 is written under the 45.

Subtract: $45 - 30 = 15$.

3. You have 15 left to divide. Find the number of 3's you can subtract from 15. Remember the division fact: $15 \div 3 = 5$. There are 5 threes in 15 so you can subtract 5 threes at once. $5 \times 3 = 15$. $15 - 15 = 0$.
4. The 5 is part of the quotient and is written above the 10. There is nothing left to subtract, so the division is finished.
5. To find the complete quotient, add the two parts of the quotient to find the total number of 3's that were subtracted. $10 + 5 = 15$. You have subtracted 15 threes from 45. $45 \div 3 = 15$. You have done in two steps what would have required 15 steps of repeated subtraction. Think of the work this will save with larger numbers.

UNIT 4

2. Bob has 64 baseball pictures for his scrapbook. If he pastes 4 pictures on each page, how many pages of pictures will he have? ____

Work Space

Find the quotients:

a	b	c	d	e	f	g
3. $2 \overline{) 36}$	$5 \overline{) 85}$	$4 \overline{) 52}$	$6 \overline{) 84}$	$3 \overline{) 57}$	$4 \overline{) 72}$	$8 \overline{) 88}$
4. $7 \overline{) 98}$	$8 \overline{) 96}$	$5 \overline{) 75}$	$6 \overline{) 96}$	$7 \overline{) 91}$	$5 \overline{) 65}$	$6 \overline{) 72}$

Lesson 2 — CHECKING DIVISION

1. The Brownies took 96 roses to the hospital. If they put 4 roses in each vase, how many vases did they need for the 96 flowers? _____
To find how many vases they needed, divide 96 by 4.

$$\begin{array}{r}
 4 \\
 10 \\
 10 \\
 \hline
 4 \overline{) 96} \\
 \underline{40} 10 \times 4 \\
 56 \\
 \underline{40} 10 \times 4 \\
 16 \\
 \underline{16} 4 \times 4 \\
 0
 \end{array}$$

- 1 See if you can subtract 10 fours all at once. $10 \times 4 = 40$. You see that you can subtract 40 from 96, because $40 < 96$.
- 2 The 10 is part of the quotient, and is written above the line. The 40 is written under the 96. **Subtract:** $96 - 40 = 56$.
- 3 You now have 56 left. You can subtract another 10 fours. $10 \times 4 = 40$. $40 < 56$.
- 4 The 10 is part of the quotient and is written above the first 10 in the quotient. The 40 is written under the 56. **Subtract:** $56 - 40 = 16$.
- 5 You have 16 left to divide. Find the number of 4's to subtract. Remember the division fact $16 \div 4 = 4$. You can subtract 4 fours at once. $4 \times 4 = 16$.
- 6 The 4 is a part of the quotient and is written above the 10's in the quotient. The 16 is written under the 16. **Subtract:** $16 - 16 = 0$. There is nothing left over, so the division is finished.
- 7 To find the complete quotient, add the three parts of the quotient. This is the total number of 4's that were subtracted. $10 + 10 + 4 = 24$. You have subtracted 24 fours from 96. $96 \div 4 = 24$. You have done in 7 steps what would have required 24 steps if you had subtracted 4 at a time.

To check a problem in division, multiply the quotient by the divisor. (The divisor is the number by which you divide.) If the work is correct, the product will be the same as the dividend. (The dividend is the number that is divided.)

Check:

$$\begin{array}{r}
 24 \\
 \times 4 \\
 \hline
 96
 \end{array}$$

2. Find the quotients. Check your work:

a	b	c	d	e	f	g	h	i
$3 \overline{) 72}$	$3 \overline{) 84}$	$3 \overline{) 78}$	$2 \overline{) 58}$	$2 \overline{) 52}$	$2 \overline{) 48}$	$4 \overline{) 92}$	$4 \overline{) 88}$	$3 \overline{) 87}$

Lesson 3 — DIVISION WITH REMAINDERS

1. There were 85 boys and girls on the playground. They were divided into 2 groups to play games. Find how many were in each group.

$$\begin{array}{r}
 2 \\
 10 \\
 30 \\
 \hline
 2 \overline{)85} \\
 \underline{60} 30 \times 2 \\
 25 \\
 \underline{20} 10 \times 2 \\
 5 \\
 \underline{4} 2 \times 2 \\
 1 \text{remainder}
 \end{array}$$

- 1 You can see that there are more than 10 twos in 85. See if you can subtract 30 twos all at once. $30 \times 2 = 60$. $60 < 85$, so you can subtract.
- 2 The 30 is written as a part of the quotient. $85 - 60 = 25$.
- 3 You have 25 left. See if you can subtract another 10 twos. $10 \times 2 = 20$. $20 < 25$, so you can subtract.

- 4 The 10 is written as a part of the quotient. $25 - 20 = 5$.
- 5 You have 5 left. How many 2's are there in 5? 5 cannot be divided by 2 evenly. Think of a number less than 5 that can be evenly divided by 2. Remember the division fact $4 \div 2 = 2$, or think $2 \times 2 = 4$. You can subtract 2 twos from 5 and have 1 left over. $5 - 4 = 1$.
- 6 The 2 is written above 10 in the quotient. You have 1 left. Since $2 > 1$, you cannot subtract 2 from 1, so the subtraction is finished. The 1 that is left over is called the **remainder**. The remainder is always less than the divisor. Add the parts of the quotient. $30 + 10 + 2 = 42$. $85 \div 2 = 42$ with a remainder of 1.

UNIT 4

Check: To check a problem in division, multiply the quotient by the divisor. Add the remainder to the product. If this answer is the same as the dividend, the quotient is probably correct. Now look at the problem worked a shorter way.

$$\begin{array}{r}
 42 \\
 \times 2 \\
 \hline
 84 \\
 + 1 \\
 \hline
 85
 \end{array}$$

Do you see that you could have subtracted 40 twos all at once? This would have shortened the problem.

$$\begin{array}{r}
 2 \\
 40 \\
 \hline
 2 \overline{)85} \\
 \underline{80} 40 \times 2 \\
 5 \\
 \underline{4} 2 \times 2 \\
 1 \text{remainder}
 \end{array}$$

2. Find the quotients and check:

a b c d e f g h

$$2 \overline{)89} \quad 3 \overline{)98} \quad 4 \overline{)78} \quad 2 \overline{)63} \quad 2 \overline{)91} \quad 3 \overline{)76} \quad 4 \overline{)93} \quad 3 \overline{)83}$$

Lesson 4 — DIVIDING TWO-PLACE NUMBERS

1. Find how many 4-cent marbles Bob can buy for 35 cents. How many cents will he have left?

$$\begin{array}{r} 8 \\ 4 \overline{) 35} \\ \underline{32} \\ 3 \text{ remainder} \end{array}$$

Check:

$$\begin{array}{r} 8 \\ \times 4 \\ \hline 32 \\ 3 \\ \hline 35 \end{array}$$

- 1 See if you can subtract 10 fours all at once. $10 \times 4 = 40$. But $40 > 35$, and you cannot subtract.
- 2 You need to multiply 4 by a number less than 10 to get a product that will not be more than 35. Let's try 8. $8 \times 4 = 32$. $32 < 35$, so you can subtract 8 fours all at once.
- 3 The 8 is written in the quotient. $35 - 32 = 3$. Since $4 > 3$, you cannot subtract any more fours, and your subtraction is finished. $35 \div 4 = 8$ with a remainder of 3.

Bob can buy ____ marbles and have ____ cents left.

2. Jane has 29 cents. How many candy bars at 3 cents each can she buy? ____

How many cents will she have left? ____

Find the quotients. Check your work:

Work Space

4 UNIT

a $3. 4 \overline{) 39}$

b $5 \overline{) 44}$

c $2 \overline{) 15}$

d $3 \overline{) 19}$

4. $4 \overline{) 30}$

$8 \overline{) 50}$

$9 \overline{) 38}$

$4 \overline{) 37}$

5. $6 \overline{) 43}$

$7 \overline{) 58}$

$7 \overline{) 41}$

$5 \overline{) 38}$

Lesson 5 — PRACTICE

Find the sums:

	a	b	c	d	e	f	g	h	i	j
1.	$\begin{array}{r} 64 \\ 25 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ 59 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 46 \\ \hline \end{array}$	$\begin{array}{r} 68 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 38 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 4 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 6 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 5 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ 39 \\ 72 \\ \hline \end{array}$	$\begin{array}{r} 81 \\ 69 \\ 54 \\ \hline \end{array}$

	a	b	c	d	e	f	g	h
2.	$\begin{array}{r} 586 \\ 284 \\ 385 \\ \hline \end{array}$	$\begin{array}{r} 657 \\ 566 \\ 254 \\ \hline \end{array}$	$\begin{array}{r} 297 \\ 103 \\ 189 \\ \hline \end{array}$	$\begin{array}{r} \$1.57 \\ 6.93 \\ 4.00 \\ \hline \end{array}$	$\begin{array}{r} 259 \\ 586 \\ \hline \end{array}$	$\begin{array}{r} 4853 \\ 3047 \\ \hline \end{array}$	$\begin{array}{r} 1578 \\ 5324 \\ \hline \end{array}$	$\begin{array}{r} \$32.95 \\ 59.07 \\ \hline \end{array}$

Find the differences:

3.	$\begin{array}{r} 78 \\ 57 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ 38 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ 40 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 983 \\ 280 \\ \hline \end{array}$	$\begin{array}{r} 715 \\ 492 \\ \hline \end{array}$	$\begin{array}{r} 594 \\ 198 \\ \hline \end{array}$	$\begin{array}{r} \$8.05 \\ 3.65 \\ \hline \end{array}$
4.	$\begin{array}{r} 874 \\ 498 \\ \hline \end{array}$	$\begin{array}{r} 785 \\ 287 \\ \hline \end{array}$	$\begin{array}{r} 976 \\ 309 \\ \hline \end{array}$	$\begin{array}{r} 6175 \\ 2148 \\ \hline \end{array}$	$\begin{array}{r} 7654 \\ 2931 \\ \hline \end{array}$	$\begin{array}{r} 8049 \\ 2070 \\ \hline \end{array}$	$\begin{array}{r} 4808 \\ 3009 \\ \hline \end{array}$	$\begin{array}{r} \$7.93 \\ 4.37 \\ \hline \end{array}$

Find the products:

5.	$\begin{array}{r} 23 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 83 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 425 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 237 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 274 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 614 \\ 7 \\ \hline \end{array}$
6.	$\begin{array}{r} 89 \\ 27 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ 68 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ 73 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 45 \\ \hline \end{array}$	$\begin{array}{r} 629 \\ 84 \\ \hline \end{array}$	$\begin{array}{r} 386 \\ 95 \\ \hline \end{array}$	$\begin{array}{r} 470 \\ 38 \\ \hline \end{array}$	$\begin{array}{r} 248 \\ 46 \\ \hline \end{array}$

Find the quotients:

7. $3 \overline{)45}$ $2 \overline{)98}$ $4 \overline{)64}$ $6 \overline{)84}$ $8 \overline{)96}$ $7 \overline{)51}$ $5 \overline{)95}$ $7 \overline{)84}$

8. $4 \overline{)49}$ $3 \overline{)76}$ $6 \overline{)59}$ $5 \overline{)78}$ $5 \overline{)69}$ $8 \overline{)89}$ $5 \overline{)48}$ $7 \overline{)97}$

UNIT 4

TOP SCORE: 67 MY SCORE: _____

Lesson 6 — DIVIDING THREE-PLACE NUMBERS

1. Tom counted 348 pennies that his class took in for homemade candy at the school carnival. They sold the candy at 3¢ apiece. How many pieces had they sold? _____

$$\begin{array}{r}
 6 \\
 10 \\
 100 \\
 3 \overline{) 348} \\
 \underline{300} \quad 100 \times 3 \\
 48 \\
 \underline{30} \quad 10 \times 3 \\
 18 \\
 \underline{18} \quad 6 \times 3 \\
 0
 \end{array}$$

- 1 Since you are dividing a 3-place number, see if you can subtract 100 threes all at once. $100 \times 3 = 300$. $300 < 348$, so you can subtract.
- 2 The 100 is written as a part of the quotient. $348 - 300 = 48$
- 3 You now have 48 left to divide. Let's see if you can subtract 10 threes all at once. $10 \times 3 = 30$. $30 < 48$, so you can subtract.
- 4 The 10 is written as part of the quotient. The 30 is subtracted. $48 - 30 = 18$.
- 5 You have 18 left to divide. You can find the number of 3's to subtract by remembering a division fact. $18 \div 3 = \underline{\quad}$. The answer is part of the quotient. **Finish the division and write the answer after the question:**

Work Space

2. Jane counted 396 pennies she had collected for popcorn balls. The popcorn balls were also 3 cents each. How many balls were sold? _____

4 UNIT

Find the quotients:

a b c d e f g

3. $4 \overline{) 732}$ $5 \overline{) 575}$ $6 \overline{) 696}$ $3 \overline{) 381}$ $2 \overline{) 268}$ $9 \overline{) 999}$ $7 \overline{) 798}$

4. $3 \overline{) 357}$ $4 \overline{) 492}$ $5 \overline{) 565}$ $7 \overline{) 798}$ $8 \overline{) 896}$ $5 \overline{) 585}$ $6 \overline{) 696}$

Lesson 7 — DIVIDING WITH REMAINDERS

1. One day because of a snowstorm, many boys and girls waited at school for their parents. While they waited, the girls cut out 517 pictures. The boys pasted the pictures in a large scrapbook. If they pasted 5 pictures on each page, how many pages did they fill? _____ How many pictures were left over? _____

1 Begin this problem like the others you have been working. Subtract 100 fives from 517. You have 17 left to divide. How many 5's are there in 17? Think of a number less than 17 that you can divide evenly by 5. Remember the division fact: $15 \div 5 = 3$, or think: $5 \times \underline{\quad} = 15$. $3 \times 5 = 15$. $17 - 15 = 2$. You can subtract 3 fives from 17 and have 2 left over.

2 Since $5 > 2$, you cannot subtract 5 from 2, so your subtraction is finished. The remainder is 2. Remember that the remainder is always less than the divisor. **Write your answers after the questions; then check the work.**

$$\begin{array}{r} 3 \overline{) 103} \\ \underline{100} \\ 3 \overline{) 517} \\ \underline{500} \\ 17 \\ \underline{15} \\ 2 \text{ remainder} \end{array}$$

Check:

$$\begin{array}{r} 103 \\ \times 5 \\ \hline 515 \\ + 2 \\ \hline 517 \end{array}$$

2. Louise had 475 picture postcards. She pasted 4 postcards on each page of her scrapbook. How many pages did she fill? _____ How many cards did she have left? _____ Check the answers.

Find the quotients. Check your answers in Number 3:

a

b

c

d

e

3. $5 \overline{) 529}$

$7 \overline{) 754}$

$8 \overline{) 879}$

$9 \overline{) 957}$

$2 \overline{) 247}$

4. $6 \overline{) 695}$

$3 \overline{) 325}$

$4 \overline{) 487}$

$5 \overline{) 548}$

$3 \overline{) 395}$

Work Space

UNIT 4

Lesson 8 — MORE DIVISION

1. Bob's father drove 162 miles at the same speed in 3 hours. How many miles did he drive in one hour? _____

$$\begin{array}{r}
 4 \left. \begin{array}{l} 40 \\ 10 \end{array} \right\} 54 \\
 3 \overline{) 162} \\
 \underline{30} \quad 10 \times 3 \\
 132 \\
 \underline{120} \quad 40 \times 3 \\
 12 \\
 \underline{12} \quad 4 \times 3 \\
 0
 \end{array}$$

1 See if you can subtract 100 threes all at once. $100 \times 3 = 300$. But $300 > 162$, and you cannot subtract. Try 10 threes. $10 \times 3 = 30$. $30 < 162$, so you can subtract. $162 - 30 = 132$.

2 10 is part of the quotient and is written above the line. You see that you could have subtracted more than 10 threes at once. You now have 132 left to divide. Try 40 threes. $40 \times 3 = 120$. $120 < 132$, so you can subtract. Write 40 above the 10 in the quotient. $132 - 120 = 12$.

3 Remember the division fact $12 \div 3 = 4$ and you will see that you can subtract 4 threes at once.

4 $12 - 12 = 0$. There is nothing left to subtract, so the division is completed.

5 Notice that you have $10 + 40$ in your quotient. $10 + 40 = 50$. You could have subtracted 50 threes at once to make the problem shorter.

Now add the parts of the quotient and write your answer in the space after the question.

Find the quotients:

a	b	c	d	e	f	g
2. $4 \overline{) 388}$	$3 \overline{) 258}$	$5 \overline{) 285}$	$2 \overline{) 118}$	$7 \overline{) 266}$	$6 \overline{) 456}$	$8 \overline{) 528}$

3. $7 \overline{) 448}$	$9 \overline{) 729}$	$6 \overline{) 384}$	$6 \overline{) 216}$	$3 \overline{) 294}$	$7 \overline{) 343}$	$5 \overline{) 445}$
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Lesson 9 — MORE DIVISION WITH REMAINDERS

1. Bill had 957 stamps to put into 4 albums. He put the same number of stamps in each album. How many stamps were in each album? _____
How many stamps did he have left? _____

1 See if you can subtract 100 fours at once. You can subtract more than this. Try 200 fours. $200 \times 4 = 800$. $800 < 957$, so you can subtract.

2 $957 - 800 = 157$. Now you can subtract more than 10 fours and more than 20 fours. Try 30 fours. $30 \times 4 = 120$. $120 < 157$, so you can subtract.

$$\begin{array}{r}
 9 \text{ } \left. \begin{array}{l} 30 \\ 200 \end{array} \right\} 239 \\
 4 \overline{) 957} \\
 \underline{800} \quad 200 \times 4 \\
 157 \\
 \underline{120} \quad 30 \times 4 \\
 37 \\
 \underline{36} \quad 9 \times 4 \\
 1 \text{ remainder}
 \end{array}$$

Work the rest of the problems as you have worked the other division problems.
Write the answers after the questions.

2. Lucy had 518 pretty buttons. She put the buttons into three little drawers. If she put the same number of buttons in each drawer, how many buttons did she have in each drawer? _____ How many were left? _____

Find the quotients:

a b c d e f g

3. a $4 \overline{) 575}$ b $7 \overline{) 888}$ c $3 \overline{) 718}$ d $6 \overline{) 717}$ e $2 \overline{) 723}$ f $8 \overline{) 929}$ g $5 \overline{) 722}$

4. a $6 \overline{) 833}$ b $3 \overline{) 524}$ c $9 \overline{) 987}$ d $5 \overline{) 672}$ e $4 \overline{) 892}$ f $7 \overline{) 825}$ g $8 \overline{) 932}$

5. a $5 \overline{) 893}$ b $3 \overline{) 944}$ c $7 \overline{) 927}$ d $8 \overline{) 889}$ e $2 \overline{) 799}$ f $4 \overline{) 897}$ g $6 \overline{) 898}$

TOP SCORE: 24 MY SCORE: _____

Lesson 10 — PRACTICE IN DIVISION

a	b	c	d	e	f	g	h
1. $5 \overline{)75}$	$2 \overline{)32}$	$9 \overline{)99}$	$3 \overline{)84}$	$6 \overline{)84}$	$7 \overline{)91}$	$4 \overline{)92}$	$8 \overline{)96}$

2. $3 \overline{)82}$	$7 \overline{)83}$	$2 \overline{)93}$	$5 \overline{)72}$	$8 \overline{)93}$	$6 \overline{)87}$	$4 \overline{)89}$	$5 \overline{)97}$
-----------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------

3. $4 \overline{)35}$	$2 \overline{)19}$	$7 \overline{)55}$	$5 \overline{)48}$	$3 \overline{)23}$	$8 \overline{)52}$	$7 \overline{)39}$	$5 \overline{)42}$
-----------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------

a	b	c	d	e	f	g
4. $4 \overline{)844}$	$8 \overline{)896}$	$5 \overline{)582}$	$3 \overline{)965}$	$7 \overline{)789}$	$2 \overline{)847}$	$6 \overline{)684}$

5. $5 \overline{)475}$	$9 \overline{)783}$	$4 \overline{)328}$	$8 \overline{)768}$	$6 \overline{)456}$	$7 \overline{)483}$	$3 \overline{)255}$
------------------------	---------------------	---------------------	---------------------	---------------------	---------------------	---------------------

6. $6 \overline{)593}$	$5 \overline{)749}$	$4 \overline{)486}$	$7 \overline{)643}$	$9 \overline{)999}$	$3 \overline{)527}$	$6 \overline{)794}$
------------------------	---------------------	---------------------	---------------------	---------------------	---------------------	---------------------

Lesson 11 — DIVIDING NUMBERS WITH ZEROS

You can see from the examples on this page that division problems with zeros in the dividends are easy to work. You can work these problems as you have worked any of the other division problems. If you come to a part of a problem that seems hard, turn back to the division lessons before these and study each step.

1. Four boys have 390 daily newspapers to deliver. Each boy delivers the same number of papers. How many papers will each boy deliver? _____

How many papers will be left over? _____



2. Three boys have 680 papers to deliver in another part of town. If each boy delivers the same number, how many papers will each boy deliver? _____

How many papers will be left over? _____



3. Three boys deliver 320 papers in the south part of town. If each boy delivers the same number of papers, how many will each boy deliver? _____

How many papers will be left over? _____



4. Find the quotients:

a

b

c

d

e

f

g

$$6 \overline{) 440}$$

$$3 \overline{) 290}$$

$$4 \overline{) 890}$$

$$3 \overline{) 670}$$

$$4 \overline{) 450}$$

$$5 \overline{) 590}$$

$$8 \overline{) 530}$$

$$\begin{array}{r} 7 \overline{) 90} \\ 4 \overline{) 390} \\ \underline{360} \quad 90 \times 4 \\ 30 \\ \underline{28} \quad 7 \times 4 \\ 2 \text{ remainder} \end{array}$$

$$\begin{array}{r} 6 \overline{) 200} \\ 3 \overline{) 680} \\ \underline{600} \quad 200 \times 3 \\ 80 \\ \underline{60} \quad 20 \times 3 \\ 20 \\ \underline{18} \quad 6 \times 3 \\ 2 \text{ remainder} \end{array}$$

$$\begin{array}{r} 6 \overline{) 100} \\ 3 \overline{) 320} \\ \underline{300} \quad 100 \times 3 \\ 20 \\ \underline{18} \quad 6 \times 3 \\ 2 \text{ remainder} \end{array}$$

UNIT 4

This lesson also shows how easily you can work division problems with zeros.

-

a

b

C

d

e

f

g

$$8 \overline{) 608}$$

- 4 UNIT

a

b

C

d

e

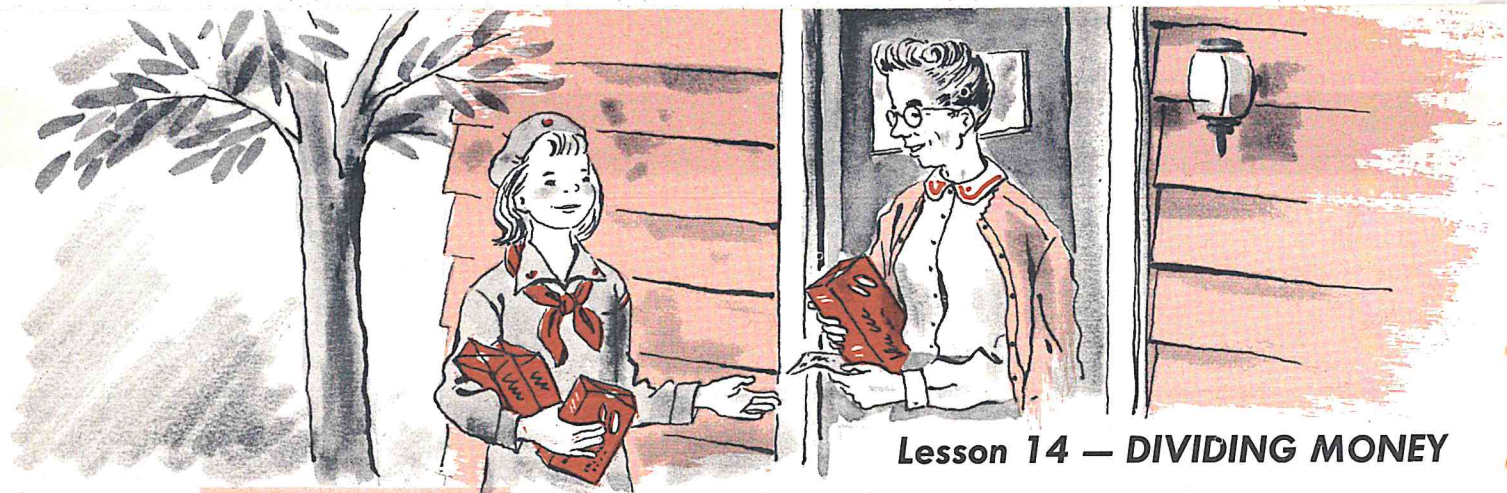
9

$$6 \overline{) 609}$$

$$9 \overline{) 806}$$

$$\begin{array}{r} 8 \\ 60 \\ \hline 6 \overline{) 408} \\ \underline{360} \\ 48 \\ \underline{48} \\ 0 \end{array} \quad \begin{array}{l} \left. \begin{array}{l} 8 \\ 60 \end{array} \right\} 68 \\ 60 \times 6 \\ 8 \times 6 \end{array}$$

$$\begin{array}{r} 50 \\ 100 \end{array} \left. \vphantom{\begin{array}{r} 50 \\ 100 \end{array}} \right\} 150$$
$$\begin{array}{r} 6 \overline{) 901} \\ \underline{600} \\ 301 \\ \underline{300} \\ 1 \end{array} \quad \begin{array}{l} 100 \times 6 \\ 50 \times 6 \\ \text{remainder} \end{array}$$



Lesson 14 — DIVIDING MONEY

1.
$$\begin{array}{r} 5 \overline{) 25} \\ \underline{20} \\ 5 \end{array}$$

4 $\overline{) 100}$ 20×4

$\underline{80}$

20

$\underline{20}$ 5×4

Jane sold 4 boxes of cookies for \$1.00. Find how much Jane received for each box. **Think:** \$1.00 = 100 cents. Work the problem as other division problems you have had. Jane received _____ cents for each box.

2. Work Space

One Saturday, Dan earned \$1.05 delivering packages for the druggist. He delivered 3 packages. How much did he earn for delivering each package? _____ **Think:** \$1.05 = 105 cents.

Divide. Before dividing, change the dollars to hundreds of cents:

4 UNIT

a

3. $4 \overline{) \$2.84} = 4 \overline{) 284} \text{ ¢}$

b

$2 \overline{) \$1.90} = 2 \overline{) 190} \text{ ¢}$

c

$5 \overline{) \$4.35} = 5 \overline{) 435} \text{ ¢}$

4. $6 \overline{) \$5.16}$

$8 \overline{) \$5.84}$

$3 \overline{) \$2.25}$

5. $5 \overline{) \$4.95}$

$6 \overline{) \$3.06}$

$6 \overline{) \$5.82}$

Lesson 15 — PRACTICE

1. Find the sums:

a	b	c	d	e	f	g	h
$\begin{array}{r} 4140 \\ 2096 \\ \hline \end{array}$	$\begin{array}{r} 1258 \\ 3764 \\ \hline \end{array}$	$\begin{array}{r} 3708 \\ 3257 \\ \hline \end{array}$	$\begin{array}{r} 3577 \\ 2629 \\ \hline \end{array}$	$\begin{array}{r} \$3.47 \\ 1.39 \\ 4.27 \\ \hline \end{array}$	$\begin{array}{r} 377 \\ 784 \\ 209 \\ \hline \end{array}$	$\begin{array}{r} 442 \\ 237 \\ 136 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 19 \\ 40 \\ \hline \end{array}$

2. Find the differences:

a	b	c	d	e	f	g
$\begin{array}{r} \$48.65 \\ 23.59 \\ \hline \end{array}$	$\begin{array}{r} \$58.43 \\ 42.75 \\ \hline \end{array}$	$\begin{array}{r} 406 \\ 235 \\ \hline \end{array}$	$\begin{array}{r} 623 \\ 378 \\ \hline \end{array}$	$\begin{array}{r} 826 \\ 307 \\ \hline \end{array}$	$\begin{array}{r} 308 \\ 176 \\ \hline \end{array}$	$\begin{array}{r} 412 \\ 255 \\ \hline \end{array}$

Find the products:

a	b	c	d	e	f	g	h
3. $\begin{array}{r} 98 \\ 12 \\ \hline \end{array}$	$\begin{array}{r} 87 \\ 43 \\ \hline \end{array}$	$\begin{array}{r} 96 \\ 34 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ 75 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ 87 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ 78 \\ \hline \end{array}$	$\begin{array}{r} 61 \\ 89 \\ \hline \end{array}$

4. $\begin{array}{r} 89 \\ 95 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 85 \\ 63 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ 64 \\ \hline \end{array}$	$\begin{array}{r} 391 \\ 63 \\ \hline \end{array}$	$\begin{array}{r} 370 \\ 82 \\ \hline \end{array}$	$\begin{array}{r} 489 \\ 71 \\ \hline \end{array}$	$\begin{array}{r} 598 \\ 80 \\ \hline \end{array}$
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UNIT 4

Find the quotients:

a	b	c	d	e	f	g
5. $3 \overline{)45}$	$3 \overline{)516}$	$4 \overline{)496}$	$5 \overline{)656}$	$6 \overline{)726}$	$8 \overline{)976}$	$9 \overline{)988}$
6. $4 \overline{)656}$	$3 \overline{)205}$	$6 \overline{)778}$	$2 \overline{)985}$	$7 \overline{)851}$	$5 \overline{)765}$	$9 \overline{)847}$

Lesson 16 — ARITHMETIC SENTENCES

Use these questions to help find the answer for problem 1 in this lesson:

1. What are you to find?
2. Do you add, subtract, multiply, or divide?
3. What numbers do you use to find the answers?
4. What is your answer?

To answer these questions write an arithmetic sentence for each problem. The arithmetic sentence for problem 1 would be: $2 \times \$4.47 = n$.

1. The letter **n** stands for the **number** you are to find.
2. The sentence shows that you are to **multiply**.
3. The numbers you are to use are **2** and **\$4.47**.
4. Work the problem.

Work Space

Write an arithmetic sentence for each problem before you work it:

1. Sue's mother bought 2 new pairs of curtains for Sue's room. Each pair cost \$4.47. How much did the curtains cost? _____ $2 \times \$4.47 = n$.

$$\begin{array}{r} \$4.47 \\ \times 2 \\ \hline \end{array}$$

2. Sue has saved \$4.07 for a clock for her room. The clock costs \$4.75. How much more money does she need? _____

3. Mother made 4 cushions for Sue's room. She used a yard of cloth for each one. If the cloth cost \$1.85 a yard, how much did the cushions cost? _____

4. For Sue's room Father bought a rug for \$4.97, a desk for \$23.95, and a desk lamp for \$3.88. How much did he spend? _____

5. Sue spent \$2.80 for 4 small pictures for her room. What did she pay for each picture? _____

6. Sue worked in her room 10 minutes Friday, 15 minutes Saturday, 8 minutes Monday, and 21 minutes Tuesday. How many minutes did she work? _____

Lesson 17 — USING THE RIGHT FACTS

Before working the boys' problems, write an arithmetic sentence for each problem. Pick out only the numbers you need to work the problem. An arithmetic sentence is written for you in problem 1.

1. Bob's father gave Bob and his friends 5 piles of old boards to build a hut. There were 198 boards the boys could use. If 75 of the 198 boards were long boards, how many were short boards? _____

$$198 - 75 = n \quad n = \underline{\hspace{2cm}}$$

2. The boys hauled 6 boards on their wagon at one time with 2 boys helping. How many trips did they make to haul the 198 boards? _____

3. The boys needed 4 boards 8 feet long and 3 boards 6 feet long. How many boards did the boys need? _____

4. John gave the boys 1 large window, 2 small windows, and 1 door. How many windows did he give them? _____

5. One window was 2 feet wide and needed 2 panes of glass. Another window needed 4 panes of glass. The third window needed 3 panes of glass. How many panes of glass did the 3 windows need? _____

Work Space

UNIT 4

6. Add and check your work:

$$\begin{array}{r} a \\ 537 \\ 285 \\ \hline 146 \end{array}$$

$$\begin{array}{r} b \\ 492 \\ 305 \\ \hline 684 \end{array}$$

$$\begin{array}{r} c \\ 376 \\ 180 \\ \hline 450 \end{array}$$

8. Subtract and check your work:

$$\begin{array}{r} d \\ 4812 \\ \hline 1901 \end{array}$$

$$\begin{array}{r} e \\ 6173 \\ \hline 5385 \end{array}$$

$$\begin{array}{r} f \\ 7401 \\ \hline 3090 \end{array}$$

7. Multiply and check your work:

$$\begin{array}{r} 49 \\ \hline 29 \end{array}$$

$$\begin{array}{r} 74 \\ \hline 56 \end{array}$$

$$\begin{array}{r} 57 \\ \hline 18 \end{array}$$

9. Divide and check your work:

$$7 \overline{)973}$$

$$8 \overline{)904}$$

$$6 \overline{)756}$$

Lesson 18 — TWO-STEP NUMBER STORIES

To work the problems in this lesson, you need to answer two questions. You cannot answer the second question until you know the answer to the first one.

Work the two steps of each problem in the spaces marked A and B:

1. Jim went to the store to buy a can of peas for 15¢ and a loaf of bread for 25¢. He had 45¢.

(A) How much did Jim pay for the peas and the bread?

A	B
15¢	45¢
25	— 40

(B) How much change did he get?

40¢	5¢
-----	----

2. Bob went to the newsstand for a 35¢ magazine and a 5¢ newspaper. He had 50¢.

(A) How much did Bob pay for the magazine and the newspaper?

(B) How much change did Bob get?

3. The children had \$2.75 to pay for these groceries: sugar 50¢, flour 69¢, milk 25¢, and apples 39¢.

(A) What was the total cost of the groceries?

(B) How much change was left?

4. Bill bought 3 pencils at 7¢ each and a bottle of ink for 25¢.

(A) How much did the pencils cost?

(B) How much did the pencils and the ink cost?

5. John took \$3.50 to buy 4 pounds of grass seed at 80¢ a pound.

(A) How much did the grass seed cost?

(B) How much money did John have left?

6. Ruth had 75¢ to mail a package. The postage was 53¢. It cost 10¢ to insure the package.

(A) How much did Ruth pay to send the package?

(B) How much change did she get?

7. Mrs. Smith hired the errand club to buy a tube of paste for 25¢, a bottle of ink for 20¢, and some writing paper for 35¢. She gave the boys 95¢.

(A) How much did the paste, the ink, and the writing paper cost?

(B) How much change did the boys give Mrs. Smith?

Lesson 19 — MORE TWO-STEP STORY PROBLEMS

- The girls in fourth grade bought 2 rolls of blue paper at 20¢ a roll and a package of gold paper for 30¢ for party decorations.
 - How much did the rolls of blue paper cost? _____
 - What was the total cost of the blue and gold paper? _____
- The boys made programs. They bought 3 dozen sheets of colored paper at 20¢ a dozen and a bottle of gold ink for 25¢.
 - How much did the sheets of colored paper cost? _____
 - What was the total cost of the programs? _____
- The girls made cookies for refreshments. They bought 2 pounds of sugar at 12¢ a pound. The other things they bought for the cookies cost 64¢.
 - What was the cost of the sugar? _____
 - What did the cookies cost? _____
- The children bought flowers for a bouquet for Miss Parks' desk. They bought 3 rosebuds at 25¢ each and a dozen sweet peas for 87¢. Find how much they paid for flowers.
 - How much did the rosebuds cost? _____
 - What was the total cost of the flowers? _____

UNIT 4

Write the missing numbers:

- | a | b | c | d |
|--------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 5. $3 \times \underline{\quad} = 9$ | $16 - \underline{\quad} = 9$ | $36 \div \underline{\quad} = 9$ | $5 + \underline{\quad} = 9$ |
| 6. $15 - \underline{\quad} = 8$ | $4 \times \underline{\quad} = 8$ | $2 + \underline{\quad} = 8$ | $48 \div \underline{\quad} = 8$ |
| 7. $9 \times \underline{\quad} = 18$ | $6 \times \underline{\quad} = 18$ | $2 \times \underline{\quad} = 18$ | $3 \times \underline{\quad} = 18$ |
| 8. $4 \times \underline{\quad} = 24$ | $8 \times \underline{\quad} = 24$ | $6 \times \underline{\quad} = 24$ | $3 \times \underline{\quad} = 24$ |

Work these problems:

- | a | b | c | d | e | f | g | h |
|-------------------|-------------------|------------|------------|----------------------|----------------------|--------------------|--------------------|
| 9. 427 | 602 | 423 | 567 | | | 473 | 581 |
| 324 | 393 | $\times 8$ | $\times 7$ | $5 \overline{) 475}$ | $8 \overline{) 648}$ | $\underline{-249}$ | $\underline{-397}$ |
| $\underline{+29}$ | $\underline{+75}$ | | | | | | |

TOP SCORE: 32 MY SCORE: _____

Lesson 20 — FINDING AVERAGES

1. John went bowling with his family. The scores for his first 3 games were 165, 190, and 170. What was his average score for the three games? _____

Add: ← First, find the total number of points scored.

165

190

170

525

Then find what the score for each game would have been if the same number of points had been made in each game. Divide the total points by the number of games. $525 \div 3 = 175$ →

Add: John's average for the 3 games was 175 points.

175

175

175

525

← You can see that if he had made 175 in each game, his total would have been the same.

Divide:

$$\begin{array}{r} 5 \overline{)175} \\ \underline{10} \\ 70 \\ \underline{60} \\ 100 \\ \underline{90} \\ 100 \\ \underline{90} \\ 100 \\ \underline{90} \\ 10 \\ \underline{10} \\ 0 \end{array}$$

2. On a fishing trip Tom and his father caught 5 fish the first day. The fish weighed 3 pounds, 2 pounds, 5 pounds, 4 pounds, and 1 pound. What was the average weight of the fish? _____

Add: ← To find the average weight of the fish, first find the total number of pounds the 5 fish weighed.

3

2

5

4

1

15

Then divide the total number of pounds by the number of fish. This is the way you find the average weight of the fish. This is the amount each fish would weigh if each of the fish weighed the same amount.

Divide:

$$5 \overline{)15}$$

3. Ellen swam across the pool 4 times the first day, 5 times the second day, and 6 times the third day. What was her average for the three days? _____

Work Space

4. The first day Jane skated around the rink 9 times, the second day 8 times, and the third day 10 times. What was the average number of times that she skated around the rink? _____

5. Find the averages:

a

130

43

214

b

18

24

32

22

14

c

76

92

47

33

d

122

232

124

18

e

38

14

23

f

74

82

Lesson 21 — LINEAR MEASURE

12 inches (in.) = 1 foot (ft.)

3 feet (ft.) = 1 yard (yd.)

36 inches (in.) = 1 yard (yd.)

5280 feet (ft.) = 1 mile (mi.)

1. The roof of a birdhouse is made from a board 8 inches long. Look at your ruler to see how long 8 inches is. How much less than a foot is 8 inches? _____

Work Space

2. Bob has a board 9 feet long. How many yards long is it? _____

3. Bob put a birdhouse on a post 7 feet high. How many inches high is the post? _____

Work Space

4. It is 3642 feet from Bob's house to Bill's house. How many feet less than a mile is this? _____
How many yards less? _____

5. How many boards 8 inches long can be cut from a board 6 feet long? _____

Write the answers:

6. _____ inches = 1 foot _____ feet = 1 yard _____ inches = 1 yard
7. 2 feet = _____ inches 1760 yards = _____ miles 3 yards = _____ inches

UNIT 4

Symbols are sometimes used in writing feet and inches. 7 feet, written with a symbol, is 7'. 2 inches, written with a symbol, is 2".

Write these feet and inches, using symbols:

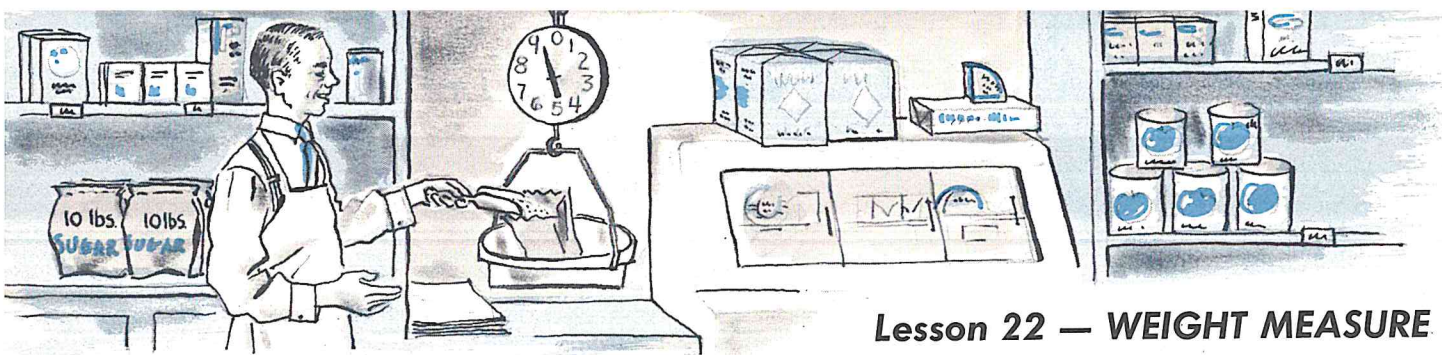
8. 2 feet _____ 8 feet _____ 5 inches _____ 9 inches _____
9. 6 feet _____ 5 feet _____ 7 inches _____ 4 inches _____

10. Use this chart to find the answers:

- a. Who is the tallest? _____
b. Who is the shortest? _____
c. Find the difference between the two heights. _____
d. What is the average height for these four? _____

NAME	HEIGHT (inches)
Jerry	55
John	54
Sue	53
Mary	50

TOP SCORE: 24 MY SCORE: _____



Lesson 22 — WEIGHT MEASURE

16 ounces (oz.) = 1 pound (lb.)

2000 pounds (lb.) = 1 ton (T.)

1. Max bought one pound of peanuts. How many ounces is one pound? _____

Work Space

2. Max and 3 of his friends shared the pound of nuts equally. How many ounces of peanuts did each of the 4 boys have? _____

3. Mr. Hale, a grocer, had a ton of peanuts to sell in his grocery stores. How many pounds are in one ton? _____

4. Mr. Hale sold 1500 pounds of the ton of peanuts before Christmas. How many pounds of peanuts did he have left after Christmas? _____

5. The grocer bought a ton of sugar in 100-pound bags. How many 100-pound bags of sugar did he buy? _____

6. If he divided the sugar in each of the 100-pound bags into 10-pound sacks, how many 10-pound sacks would he have? _____

Work Space

7. Jack bought 1 pound 8 ounces of candy. If each piece of candy weighed 1 ounce, how many pieces did he have? _____

8. One piece of candy weighs 1 ounce. If Joe bought a pound of candy for 32¢, how much did each piece cost? _____

4 UNIT

9. A jar weighing 20 ounces weighs 1 pound and _____ ounces.

Use the symbol $>$ or $<$ to compare these measures:

a

b

c

- | | | |
|--|------------------------------------|-------------------------------------|
| 10. 24 ounces _____ 1 pound | 1500 pounds _____ 1 ton | 1 pound _____ 15 ounces |
| 11. 1 ton _____ 2500 pounds | 3000 pounds _____ 1 ton | $\frac{1}{2}$ pound _____ 6 ounces |
| 12. $\frac{1}{4}$ ton _____ 1000 pounds | $\frac{1}{4}$ ton _____ 400 pounds | $\frac{1}{2}$ pound _____ 10 ounces |
| 13. Write the abbreviations for: ounce _____ pound _____ ton _____ | | |

Lesson 23 — LIQUID MEASURE



2 pints (pt.) = 1 quart (qt.) 1 cup (c) = 8 fluid ounces (fl. oz.)
4 quarts (qt.) = 1 gallon (gal.) 2 cups (c) = 1 pint (pt.)

Read the recipe and answer these questions:

Mary's Candy Recipe

2 cups brown sugar
1 cup sugar
1 cup milk
2 tablespoons syrup
 $\frac{1}{4}$ teaspoon salt
 $\frac{1}{2}$ cup chopped nuts



1. Mary made candy. She had a pint of milk.
 - a. How many cups are in 1 pint? _____
 - b. How many fluid ounces are in 1 pint? _____
 - c. How many fluid ounces of milk did Mary use? _____
2. Mary's mother made punch for the Parent Teachers Association Meeting.
 - a. How many quarts of water did Mary's mother use? _____
 - b. How many pints of apple juice? _____
 - c. How many cups of orange juice? _____
3. Mike's brother built a small car that he called "Doodlebug." The gas tank holds 1 quart of gasoline. What does a quart of gasoline cost if one gallon costs 32¢? _____

Punch Recipe

3 cups sugar $1\frac{1}{2}$ cups lemon juice
1 gallon water 1 pint orange juice
1 pint tea 1 quart apple juice
2 quarts cranberry juice

Work Space

4. Mike's family uses 30 gallons of milk in a month. At 88¢ a gallon what is the monthly cost of milk for Mike's family? _____

UNIT 4

Write the missing numbers:

a

b

c

5. _____ cups = 1 quart _____ quarts = 5 gallons 1 pint = _____ fluid ounces
6. _____ pints = 1 gallon 1 cup = _____ fluid ounces 1 quart = _____ fluid ounces

7. Write the abbreviations for these words:

a

b

c

d

e

fluid ounce _____ cup _____ pint _____ quart _____ gallon _____

Use the symbol > or < to compare these measures:

a

b

c

8. 3 cups _____ 1 pint 3 quarts _____ 1 gallon 1 pint _____ 6 fluid ounces
9. 2 cups _____ $\frac{1}{2}$ pint 5 quarts _____ 9 pints 15 fluid ounces _____ 2 cups
10. 1 cup _____ $\frac{1}{4}$ pint $\frac{1}{2}$ quart _____ 3 pints 9 fluid ounces _____ 2 cups

TOP SCORE: 28 MY SCORE: _____

Assembly to-day 2:30 P.M.

Lesson 24 — TIME MEASURES

On the chalkboard, the class read an announcement that assembly would be held at 2:30 P.M.

Their teacher pointed out that the clockface has only twelve hours. She said that the hour hand goes around the clockface twice in the twenty-four hours in each day. The time from midnight to noon is shown by the letters **A.M.**, and the time from noon to midnight is shown by the letters **P.M.**

The **2:30 P.M.** in the notice means that the assembly will be at 2:30 o'clock in the afternoon.

1. Write the right letters, A.M. or P.M.:

Breakfast time	8:15 _____	Morning play time	10:10 _____
Bedtime	9:00 _____	Afternoon school time	1:15 _____

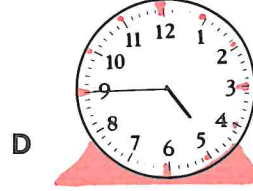
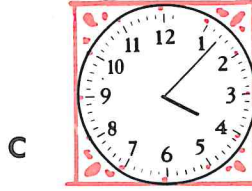
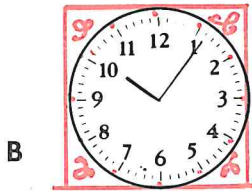
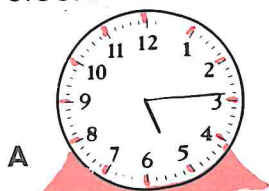
2. How many minute marks between: 4. Count by 5's the minute marks on the clockface. How many minutes are in one hour? _____
- 12 and 1 _____ ; 2 and 3 _____ ;
- 3 and 4? _____

3. There are _____ minute marks between each number on the clock.

Clockface A shows 14 minutes past 5 o'clock, or **5:14**.

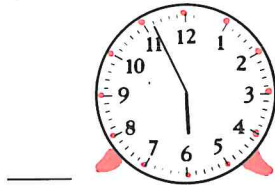
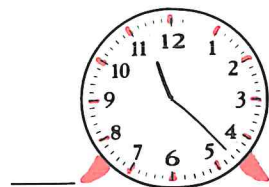
Clockface B shows 6 minutes past 10:00 or **10:06**.

4 UNIT

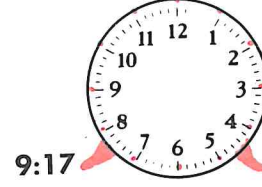
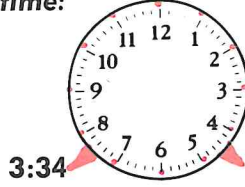


5. The minute hand goes from one small mark to the next small mark in one minute. On clockface C the hour hand points to 4 and the minute hand points to the seventh small mark. The time is 7 minutes past 4 o'clock, or _____
6. When the minute hand points to 9, it is 15 minutes before the hour. Clockface D shows 15 minutes before 5 o'clock, or 4:45. 5 o'clock minus 15 minutes is _____ o'clock.

7. Write the time each clockface shows:



8. Draw hands on these clockfaces to show the time:



3:34

9:17

Lesson 25 — TIME MEASURES

60 seconds (sec.) = 1 minute (min.)

60 minutes = 1 hour (hr.)

24 hours = 1 day

7 days = 1 week (wk.)

52 weeks = 1 year (yr.)

12 months (mo.) = 1 year

365 days = 1 year

366 days = 1 leap year

Write the correct numbers:

a

1. Days in a regular year _____
2. Days in a leap year _____
3. Hours in a week _____

b

- Minutes in a day _____
- Seconds in an hour _____
- Months in 8 years _____

4. John and his father traveled from 8:00 A.M. until 6:00 P.M. How many hours did they travel? _____

Work Space

5. Uncle Will and Aunt Helen were on the train from 10:15 Tuesday morning until 7:45 Wednesday morning. How many hours? _____

6. The morning session of school starts at 9:00 and ends at 12:00. How many hours long? _____

7. The afternoon session of school begins at 1:30 and ends at 3:30. How many hours? _____

Work Space

8. The minute hand goes around the face of the clock in _____ minutes; in _____ hours.

9. The hour hand goes around the face of the clock in _____ hours.

10. There are _____ hours from 2:00 P.M. until 12:00 midnight.

UNIT 4



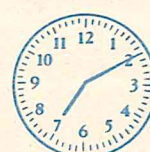
A



B



C



D

11. Bob began playing ball at 5:46. He stopped playing at 7:49. How long did Bob play ball? _____

12. Draw hands on clockface A to show the time Bob began to practice and on clockface B to show when he finished.

13. Clockface C shows the time Mary began to practice her music, and D shows the time she finished. How long did she practice? _____

14. Write the time each clockface shows:
C _____ D _____

TOP SCORE: 20 MY SCORE: _____

Lesson 26 — ROMAN NUMERALS

The early Romans used letters to write numbers. They used four letters, I, V, X, and L to write all the numbers from 1 to 50. The letter I means 1, V means 5, X means 10, and L means 50. II means $1 + 1 = 2$; XV means $10 + 5 = 15$; XXX means $10 + 10 + 10 = 30$. The same letter is never written more than three times in succession. To write 4, subtract 1 from 5. To subtract, put 1 before 5. $4 = 5 - 1$ or IV; $9 = 10 - 1$ or IX; $40 = 50 - 10$ or XL.

The Roman numerals from 1 to 49 are written:

I	1	VIII	8	XV	15	XXII	22	XXIX	29	XXXVI	36	XLIII	43
II	2	IX	9	XVI	16	XXIII	23	XXX	30	XXXVII	37	XLIV	44
III	3	X	10	XVII	17	XXIV	24	XXXI	31	XXXVIII	38	XLV	45
IV	4	XI	11	XVIII	18	XXV	25	XXXII	32	XXXIX	39	XLVI	46
V	5	XII	12	XIX	19	XXVI	26	XXXIII	33	XL	40	XLVII	47
VI	6	XIII	13	XX	20	XXVII	27	XXXIV	34	XLI	41	XLVIII	48
VII	7	XIV	14	XXI	21	XXVIII	28	XXXV	35	XLII	42	XLIX	49

C means 100. XC means $100 - 10$ or 90. The numbers from 51 — 100 are formed in the same way as the numbers from 1 — 50.

4 UNIT

1. Write the Roman numerals from 50-99.

50 _____	60 _____	70 _____	80 _____	90 _____
51 _____	61 _____	71 _____	81 _____	91 _____
52 _____	62 _____	72 _____	82 _____	92 _____
53 _____	63 _____	73 _____	83 _____	93 _____
54 _____	64 _____	74 _____	84 _____	94 _____
55 _____	65 _____	75 _____	85 _____	95 _____
56 _____	66 _____	76 _____	86 _____	96 _____
57 _____	67 _____	77 _____	87 _____	97 _____
58 _____	68 _____	78 _____	88 _____	98 _____
59 _____	69 _____	79 _____	89 _____	99 _____

2. Write these numbers our way:

XXXVI _____ XCIII _____ LXXIV _____ XLVII _____ XXXIX _____ XXII _____

Lesson 27 — REVIEW

1. Sue made some cookies. She bought 2 pounds of sugar at 15¢ per pound. Other things she needed for the cookies cost 89¢. Find the total cost of the cookies.

- (A) What was the cost of the sugar? ____
(B) What was the total cost? ____

A B

Write these Roman numerals in figures:

2. XI _____ XXX _____ IX _____
3. LXXV _____ XCIV _____ XLIV _____

Write the number that tells how many:

4. 1 day = _____ hours
5. 1 hour = _____ minutes
6. 1 week = _____ days
7. 1 leap year = _____ days

Underline the answer which you think is correct and cross out the other two:

8. Kay's weight is about:

65 tons 65 ounces 65 pounds

9. Dan's height is about:

52 yards 52 inches 52 feet

10. One gallon is:

4 cups 4 pints 4 quarts

Write these figures in Roman numerals:

11. 7 _____ 47 _____ 15 _____

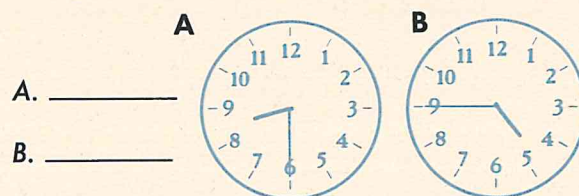
12. 28 _____ 32 _____ 50 _____

Write A.M. or P.M. on each line:

13. 7 o'clock in the morning _____

14. 3 o'clock in the afternoon _____

15. Write the time each clock tells:



UNIT 4

16. Find the averages:

a

25
32
75

b

24
25
36
15

c

16
35
21

17. Find the quotients:

a

$$9 \overline{)65}$$

b

$$8 \overline{)584}$$

c

$$9 \overline{)783}$$

d

$$5 \overline{)785}$$

e

$$7 \overline{)504}$$

f

$$6 \overline{)876}$$

Lesson 28 — TEST YOURSELF

1. Some boys and girls made programs for a party. They bought 36 sheets of colored paper at 2¢ a sheet and a bottle of silver ink for 34¢. Find how much the programs cost.

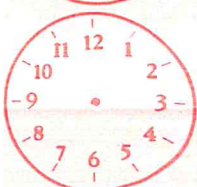
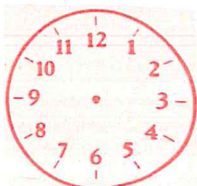
A

B

(A) How much did the colored paper cost? _____

(B) What was the total cost? _____

2.



Bob began to play ball at 4:36. He stopped playing ball at 6:15. Draw hands on the clockfaces to show these times: How long did Bob play ball? _____

Underline the correct answer:

3. 1 quart is:

2 cups 2 pints 2 gallons.

4. Jim's height is about:

55 yards 55 feet 55 inches.

5. Mary's weight is about:

68 ounces 68 pounds 68 tons.

Write the number that tells how many:

6. 1 hour = _____ seconds

7. 1 regular year = _____ hours

8. 1 day = _____ minutes

9. Find the averages:

a

125

627

205

b

25

83

26

34

4 UNIT

10. Write these figures in Roman numerals:

a

82 _____

b

27 _____

c

43 _____

d

95 _____

e

86 _____

f

70 _____

11. Write these Roman numerals in figures:

a

XLII _____

b

XXXI _____

c

XCIX _____

d

LXXVI _____

e

LXXXIV _____

12. Write A.M. or P.M. on each line:

6 o'clock in the morning _____

4 o'clock in the afternoon _____

Find the quotients:

a

13. $6 \overline{)82}$

b

$7 \overline{)43}$

c

$9 \overline{)729}$

d

$6 \overline{)423}$

e

$8 \overline{)943}$

f

$5 \overline{)535}$

14. $7 \overline{)605}$

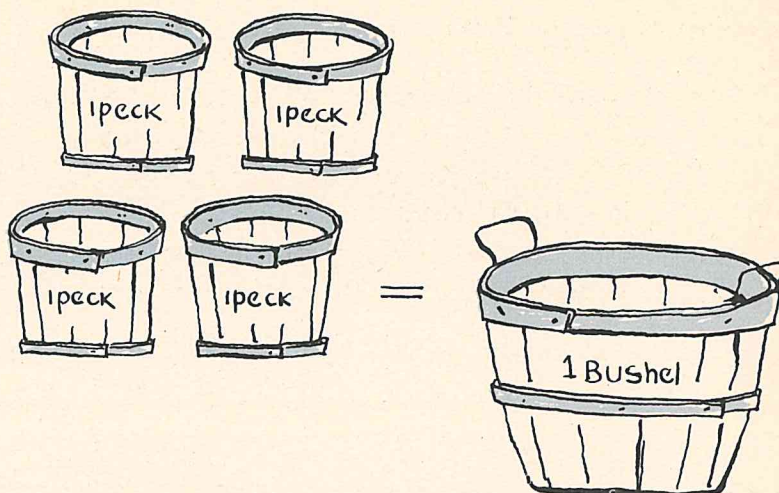
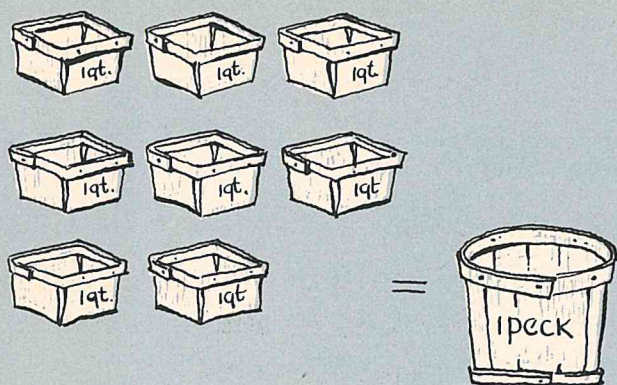
$9 \overline{)430}$

$6 \overline{)852}$

$5 \overline{)428}$

$4 \overline{)329}$

$8 \overline{)923}$



Lesson 1 — DRY MEASURE

Jim visited his Uncle Tom's farm. Uncle Tom was feeding the farm animals. He measured the corn and oats in quart and peck measures. Jim told Uncle Tom that they had learned the table of dry measures in school. Jim helped his Uncle Tom feed.

$$8 \text{ quarts (qt.)} = 1 \text{ peck (pk.)}$$

$$4 \text{ pecks (pk.)} = 1 \text{ bushel (bu.)}$$

1. Jim put 16 quarts of oats into peck containers. How many peck containers did he fill? _____

Work Space

2. If he filled a peck container with corn 8 times, how many bushel baskets could he fill? _____

3. Uncle Tom fed the pony a peck of oats each day. How long did 5 bushels of oats last? _____

4. If oats cost \$1.40 a bushel, how much does a peck of oats cost? _____

Work Space

5. If corn costs \$1.15 a bushel, how much do 5 bushels cost? _____

6. Uncle Tom bought 4 bushels of potatoes to plant. How many pecks did he buy? _____

7. Uncle Tom paid \$2.35 for a bag of potatoes. How much did 4 bags cost? _____

UNIT 5

Write the answers:

a

b

c

8. 1 bushel = _____ quarts 5 pecks = _____ quarts 6 bushels = _____ pecks
 9. 4 bushels = _____ pecks 12 pecks = _____ bushels 32 quarts = _____ pecks
 10. $\frac{1}{2}$ bushel = _____ pecks 16 pecks = _____ bushels 3 pecks = _____ quarts

TOP SCORE: 16 MY SCORE: _____

Lesson 2 — UNITS OF MEASURE

For this lesson, you may need to review the following lessons:

Linear Measure, p. 103
Weight Measure, p. 104

Liquid Measure, p. 105
Dry Measure, p. 111

Time Measure, pp. 106 and 107

You need to know one more fact: 1 dozen (doz.) = 12

You will notice that liquid and dry measures use many of the same terms, but the volume measured is different.

1. Jean's mother bought 3 dozen rolls. How many rolls did she buy? ____

Work Space

2. Mrs. Martin bought 2 gallons of vinegar. How many quarts of vinegar was that? ____

How many fluid ounces? ____

3. Jean asked the grocer for a pound of cookies. When he put the cookies on the scales, they weighed 14 ounces. How much less than a pound was this? ____

4. The grocer put a pound of candy into 4-ounce packages. How many packages did he have? ____

5. Mr. Martin bought 3 pecks of grain. How many quarts did he buy? ____

Work Space

6. Mrs. Martin bought a remnant of cloth 34 inches long. How much less than a yard was the length of the cloth? ____

7. Molly asked for 2 quarts of cream. The grocer had no quart cartons of cream, so he gave her pint cartons. How many pints of cream did Molly get? ____

8. Tom and Jean went to a movie that lasted 96 minutes. How many hours and minutes was this? ____ hr. ____ min.

Write the correct numbers:

a 9. 3 gal. = ____ qt.

10. 2 bu. = ____ pk.

b 2 qt. = ____ c.

6 pt. = ____ c.

c 4 doz. = ____

1 pt. = ____ fluid ounces

Lesson 3 — ADDING DENOMINATE NUMBERS

1. The grocer had 2 bushels 1 peck of apples. Then a farmer brought him 8 bushels 2 pecks more of apples to sell. What quantity of apples did he have then? ____ bu. ____ pk.

$$\begin{array}{r} 2 \text{ bu.} \quad 1 \text{ pk.} \\ 8 \text{ bu.} \quad 2 \text{ pk.} \\ \hline 10 \text{ bu.} \quad 3 \text{ pk.} \end{array}$$

Add, beginning at the right. Bushels are written under bushels and pecks under pecks.

2. The grocer boy dusted two shelves of canned fruit. One shelf was 5 feet 6 inches long and the other shelf was 3 feet 4 inches long. What was the length of the shelves he dusted? ____ ft. ____ in.

$$\begin{array}{r} 5 \text{ ft.} \quad 6 \text{ in.} \\ 3 \text{ ft.} \quad 4 \text{ in.} \\ \hline \end{array}$$

3. Molly's mother bought 2 gallons 1 quart of apple cider and 1 gallon 2 quarts of cherry cider. How much cider did she buy? ____ gal. ____ qt.

4. Jean bought a can of corn that weighed 1 pound 1 ounce, and a can of peaches that weighed 1 pound 13 ounces. What did the corn and peaches weigh? ____ lb. ____ oz.

5. Mr. Martin bowled 2 hours 15 minutes one day and 1 hour 40 minutes another day. How much time did he spend bowling the 2 days? ____ hr. ____ min.

Work Space

Find the sums:

a

$$\begin{array}{r} 7 \text{ gal.} \quad 1 \text{ qt.} \\ 6 \text{ gal.} \quad 2 \text{ qt.} \\ \hline \end{array}$$

b

$$\begin{array}{r} 8 \text{ ft.} \quad 6 \text{ in.} \\ 2 \text{ ft.} \quad 5 \text{ in.} \\ \hline \end{array}$$

c

$$\begin{array}{r} 10 \text{ lb.} \quad 6 \text{ oz.} \\ 8 \text{ lb.} \quad 8 \text{ oz.} \\ \hline \end{array}$$

d

$$\begin{array}{r} 3 \text{ hr.} \quad 20 \text{ min.} \\ 5 \text{ hr.} \quad 16 \text{ min.} \\ \hline \end{array}$$

$$\begin{array}{r} 8 \text{ bu.} \quad 2 \text{ pk.} \\ 9 \text{ bu.} \quad 1 \text{ pk.} \\ \hline \end{array}$$

$$\begin{array}{r} 2 \text{ pk.} \quad 3 \text{ qt.} \\ 1 \text{ pk.} \quad 2 \text{ qt.} \\ \hline \end{array}$$

$$\begin{array}{r} 4 \text{ yd.} \quad 1 \text{ ft.} \\ 2 \text{ yd.} \quad 1 \text{ ft.} \\ \hline \end{array}$$

$$\begin{array}{r} 9 \text{ min.} \quad 10 \text{ sec.} \\ 2 \text{ min.} \quad 4 \text{ sec.} \\ \hline \end{array}$$

Change to smaller units:

$$8. \quad 3 \text{ bu.} = \text{ ____ pk.} \quad 2 \text{ lb.} = \text{ ____ oz.} \quad 5 \text{ yd.} = \text{ ____ ft.} \quad 3 \text{ qt.} = \text{ ____ pt.}$$

$$9. \quad 4 \text{ T.} = \text{ ____ lb.} \quad 3 \text{ hrs.} = \text{ ____ min.} \quad 3 \text{ ft.} = \text{ ____ in.} \quad 4 \text{ gal.} = \text{ ____ qt.}$$

Change to larger units:

$$10. \quad 12 \text{ ft.} = \text{ ____ yd.} \quad 20 \text{ pk.} = \text{ ____ bu.} \quad 16 \text{ oz.} = \text{ ____ lb.} \quad 7 \text{ min.} = \text{ ____ sec.}$$

$$11. \quad 36 \text{ in.} = \text{ ____ yd.} \quad 6 \text{ c.} = \text{ ____ pt.} \quad 2000 \text{ lb.} = \text{ ____ T.} \quad 12 \text{ qt.} = \text{ ____ gal.}$$

Lesson 4 — SUBTRACTING DENOMINATE NUMBERS

1. Mike used 1 gallon 2 quarts of paint in painting the playroom in the basement. Last year he used 2 gallons 3 quarts of paint. How much less paint did he use this year than last year? _____ gal. _____ qt. *Write gallons under gallons and quarts under quarts:*

Begin at right.

Subtract:

2 gal. 3 qt.
1 gal. 2 qt.

2. The playroom is 10 feet 2 inches wide and 12 feet 9 inches long. How much longer is the room than it is wide? _____ ft. _____ in.

12 ft. 9 in.
10 ft. 2 in.

3. In cleaning the basement Mike collected 2 bushels and 1 peck of articles to throw away. Mary cleaned the attic and collected 3 bushels and 3 pecks of articles to throw away. How much more did Mary throw away than Mike? _____ bu. _____ pk.

Work Space

4. Mike and Mary weighed the old magazines. Mary's pile weighed 7 pounds 6 ounces and Mike's pile 8 pounds 11 ounces. How much more did Mike's magazines weigh than Mary's? _____ lbs. _____ oz.

5. It took Mike and Mary 5 hours 12 minutes to clean the basement and 2 hours 10 minutes to clean the garage. How much longer did it take to clean the basement than the garage? _____ hr. _____ min.

5 UNIT

Find the differences:

a

6. 8 ft. 11 in.
2 ft. 4 in.

b

9 yd. 8 ft.
2 yd. 7 ft.

c

5 min. 12 sec.
2 min. 8 sec.

d

4 hr. 30 min.
2 hr. 15 min.

7. 8 lb. 12 oz.
2 lb. 8 oz.

9 lb. 11 oz.
3 lb. 9 oz.

10 lb. 14 oz.
4 lb. 6 oz.

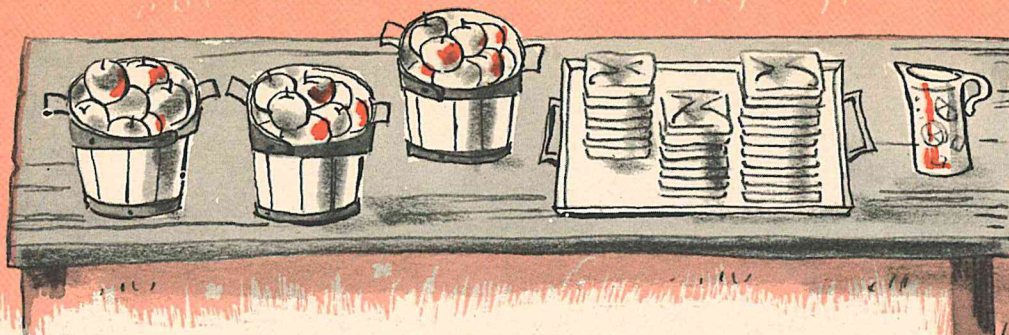
12 lb. 15 oz.
8 lb. 12 oz.

8. 8 bu. 3 pk.
6 bu. 2 pk.

3 pk. 7 qt.
2 pk. 4 qt.

7 gal. 3 qt.
5 gal. 2 qt.

5 gal. 2 qt.
4 gal. 1 qt.



Lesson 5 — MULTIPLYING DENOMINATE NUMBERS

1. Mary used 5 loaves of bread to make sandwiches to take on a picnic. A loaf of bread weighs 1 pound 2 ounces. What was the weight of the bread Mary used to make sandwiches? _____ lb. _____ oz.

$$\begin{array}{r} 1 \text{ lb. } 2 \text{ oz.} \\ \times 5 \\ \hline 5 \text{ lb. } 10 \text{ oz.} \end{array}$$

Multiply the number of ounces by 5. $5 \times 2 \text{ oz.} = 10 \text{ oz.}$
 Multiply the number of pounds by 5. $5 \times 1 \text{ lb.} = 5 \text{ lb.}$

2. Her mother made lemonade. She put the lemonade in 3 containers. If each container held 1 gallon 1 quart, how much lemonade did Mary's mother make? _____ gal. _____ qt.
3. Mike's class brought 1 bushel 1 peck of apples to the picnic. Jean's class brought 2 times as many apples. How many apples did Jean's class bring to the picnic? _____ bu. _____ pk.
4. One picnic table was 4 ft. 3 in. long. The other table was 3 times as long. How long was the second table? _____ ft. _____ in.

Work Space

$$\begin{array}{r} 1 \text{ gal. } 1 \text{ qt.} \\ \times 3 \\ \hline \end{array}$$

UNIT 5

Find the products:

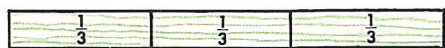
a	b	c	d
5. $\begin{array}{r} 1 \text{ yd. } 1 \text{ ft.} \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 1 \text{ ft. } 3 \text{ in.} \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \text{ ft. } 2 \text{ in.} \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \text{ ft. } 1 \text{ in.} \\ \times 7 \\ \hline \end{array}$
6. $\begin{array}{r} 2 \text{ gal. } 1 \text{ qt.} \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \text{ gal. } 1 \text{ qt.} \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 1 \text{ hr. } 10 \text{ min.} \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \text{ hr. } 6 \text{ min.} \\ \times 4 \\ \hline \end{array}$
7. $\begin{array}{r} 4 \text{ lb. } 5 \text{ oz.} \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \text{ lb. } 6 \text{ oz.} \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 3 \text{ bu. } 1 \text{ pk.} \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \text{ bu. } 1 \text{ pk.} \\ \times 2 \\ \hline \end{array}$



Lesson 6 — FRACTIONS



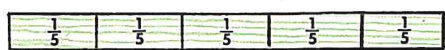
The boys are building birdhouses. Tom's board was cut into 2 equal parts. Each part is called one half. One half is written $\frac{1}{2}$.



Dan's board was cut into 3 equal parts. Each part is called one third. One third is written $\frac{1}{3}$.



Joe's board was cut into 4 equal parts. Each part is called one fourth. One fourth is written $\frac{1}{4}$.

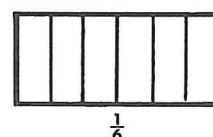
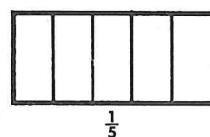
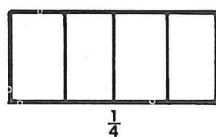
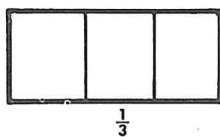
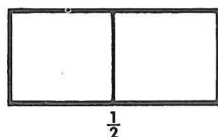


Bill's board was cut into 5 equal parts. Each part is called one fifth. One fifth is written $\frac{1}{5}$.



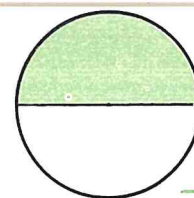
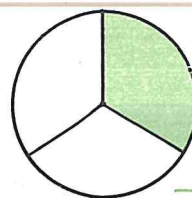
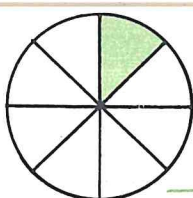
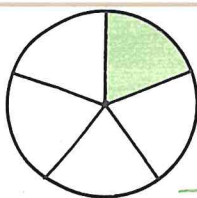
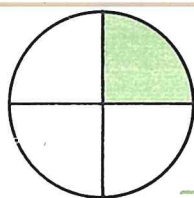
Jerry's board was cut into 6 equal parts. Each part is called one sixth. One sixth is written $\frac{1}{6}$.

1. The fractions tell what part of each rectangle to shade.

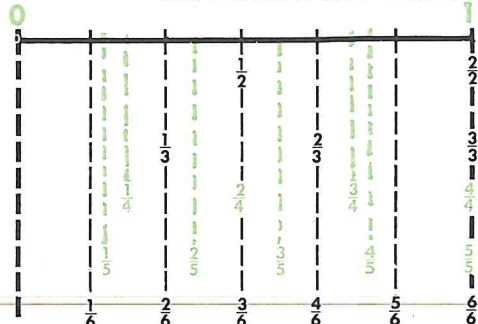


5 UNIT

2. Write the fraction that tells what part of each circle is colored:



The fraction line will help you answer these questions:



3. Which is the largest, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, or $\frac{1}{6}$? ____

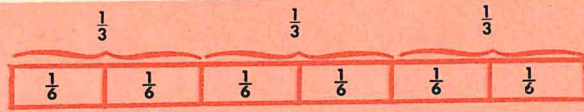
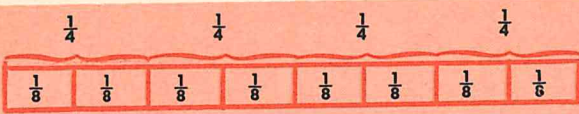
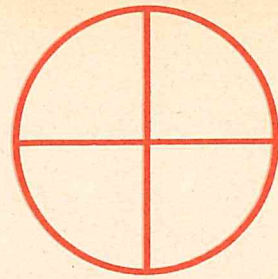
4. Which is the smallest, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, or $\frac{1}{6}$? ____

5. Which is the larger, $\frac{1}{2}$ or $\frac{1}{4}$? ____ $\frac{1}{3}$ or $\frac{1}{6}$? ____

6. Which is the smaller, $\frac{1}{4}$ or $\frac{1}{5}$? ____ $\frac{1}{2}$ or $\frac{1}{3}$? ____

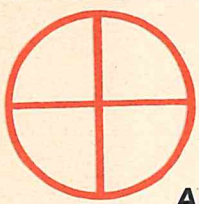
Lesson 7 — FRACTIONS

1. This circle is divided into 4 parts. Divide each part into 2 equal parts. How many parts are there? 8
Each piece is called $\frac{1}{8}$.



2. a $\frac{2}{8}$ is the same as 1/4.

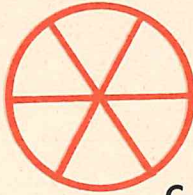
- b $\frac{2}{6}$ is the same as 1/3.



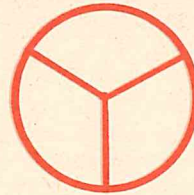
A 4



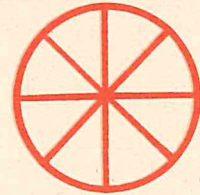
B 5



C 6



D 3

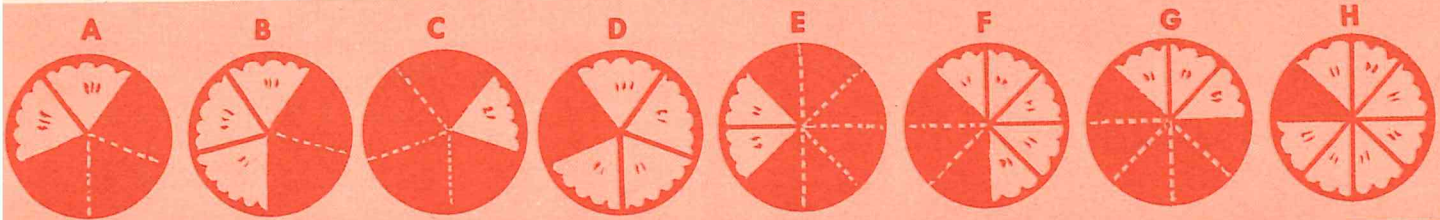


E 8

3. Under each circle write the fraction that shows 1 part:

4. Shade $\frac{3}{4}$ of circle A, $\frac{3}{5}$ of circle B, $\frac{5}{6}$ of C, $\frac{2}{3}$ of D, $\frac{3}{8}$ of E:

5. How many parts in each circle? A 4 B 5 C 6 D 3 E 8



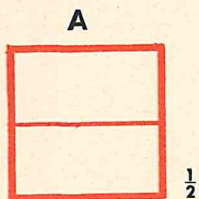
6. a. Pies A, B, C, D are cut into 4 equal parts.

- b. Pies E, F, G, H are cut into 8 equal parts.

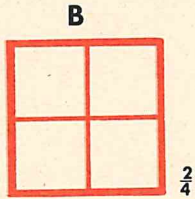
7. Write a fraction to show how much of each pie is missing:

A 1/4 B 2/5 C 1/6 D 1/3 E 5/8 F 5/8 G 5/8 H 5/8

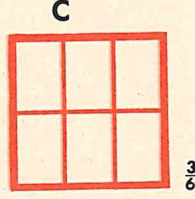
8. The fractions beside each square tell how much of each square to shade:



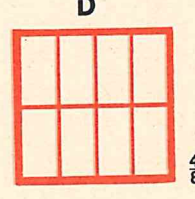
$\frac{1}{2}$



$\frac{2}{4}$



$\frac{3}{6}$



$\frac{4}{8}$

9. Which square shows that: a $\frac{2}{4}$ is the same as $\frac{1}{2}$? B

- b $\frac{3}{6}$ is the same as $\frac{1}{2}$? C

- c $\frac{4}{8}$ is the same as $\frac{1}{2}$? D

TOP SCORE: 36 MY SCORE:

Lesson 8 — FINDING FRACTIONS

1. Ellen shared her 6 dolls with Sue. She divided the dolls into 2 equal groups. The girls know that each group is one half of the dolls. How many dolls did each girl have? _____

$$\begin{array}{r} 3 \\ 2 \overline{)6} \end{array}$$

Do you see that to find $\frac{1}{2}$ of 6, you divide 6 by 2? $6 \div 2$ or $\frac{1}{2}$ of $6 = 3$. Finding $\frac{1}{2}$ of any number is the same as dividing the number by 2.

2. Tom shared his 6 apples with Ellen and Sue. He divided the apples into 3 equal groups. Each group is one third of the apples. How many apples did each one have? _____

$$\begin{array}{r} 2 \\ 3 \overline{)6} \end{array}$$

Do you see that to find $\frac{1}{3}$ of 6, you divide 6 by 3? $6 \div 3$ or $\frac{1}{3}$ of $6 = 2$. Finding $\frac{1}{3}$ of any number is the same as dividing the number by 3.

3. Billy had 16 pieces of candy. He gave $\frac{1}{4}$ of them to Ellen. How many pieces of candy did Billy give to Ellen? _____

$$\begin{array}{r} 4 \\ 4 \overline{)16} \end{array}$$

Do you see that to find $\frac{1}{4}$ of 16, you divide 16 by 4? $16 \div 4$ or $\frac{1}{4}$ of $16 = 4$. Finding $\frac{1}{4}$ of any number is the same as dividing the number by 4.

4. Sue made 12 pretty dresses for her paper dolls. She gave $\frac{1}{2}$ of them to Ellen. How many doll dresses did Sue give Ellen? _____

Work Space

5. Ellen's mother baked 24 sugar cookies. Ellen took $\frac{1}{3}$ of them to Billy. How many cookies did Ellen take to Billy? _____

5 UNIT

Write the answers:

- | a | b | c | d |
|---------------------------------|-----------------------------|-----------------------------|-----------------------------|
| 6. $\frac{1}{2}$ of 18 = _____ | $\frac{1}{4}$ of 4 = _____ | $\frac{1}{6}$ of 12 = _____ | $\frac{1}{3}$ of 12 = _____ |
| 7. $\frac{1}{3}$ of 9 = _____ | $\frac{1}{4}$ of 24 = _____ | $\frac{1}{2}$ of 10 = _____ | $\frac{1}{4}$ of 32 = _____ |
| 8. $\frac{1}{3}$ of 15 = _____ | $\frac{1}{2}$ of 14 = _____ | $\frac{1}{4}$ of 16 = _____ | $\frac{1}{8}$ of 16 = _____ |
| 9. $\frac{1}{5}$ of 20 = _____ | $\frac{1}{4}$ of 28 = _____ | $\frac{1}{3}$ of 24 = _____ | $\frac{1}{3}$ of 18 = _____ |
| 10. $\frac{1}{3}$ of 27 = _____ | $\frac{1}{3}$ of 21 = _____ | $\frac{1}{4}$ of 36 = _____ | $\frac{1}{4}$ of 12 = _____ |

Write the answers:

- | a | b |
|--|--|
| 11. $4 \overline{)24}$ $4 \times$ _____ = 24 $\frac{1}{4}$ of 24 = _____ | $3 \overline{)15}$ $3 \times$ _____ = 15 $\frac{1}{3}$ of 15 = _____ |
| 12. $2 \overline{)14}$ $2 \times$ _____ = 14 $\frac{1}{2}$ of 14 = _____ | $4 \overline{)20}$ $4 \times$ _____ = 20 $\frac{1}{4}$ of 20 = _____ |

Lesson 9 — DIVIDING MONEY

Work Space

- Bob earned 68 cents selling magazines. He put $\frac{1}{2}$ of the money into his bank. How much money did he put into his bank? _____
To find $\frac{1}{2}$ of a number, divide by _____.
- During the week Nancy earned 48 cents helping the neighbors. She put $\frac{1}{4}$ of the money into her bank. How much money did she put in her bank? _____
To find $\frac{1}{4}$ of a number, divide by _____.
- Bob earned 36 cents delivering groceries. He put $\frac{1}{3}$ of his money into his bank. How much money did Bob save? _____
To find $\frac{1}{3}$ of a number, divide by _____.
- Ann's father gave her 36 cents. She put $\frac{1}{6}$ of it into her bank. How much money did Ann save? _____
- Ruth's aunt gave her 45 cents. She bought savings stamps with $\frac{1}{5}$ of it. How much did she spend for savings stamps? _____

Write the answers:

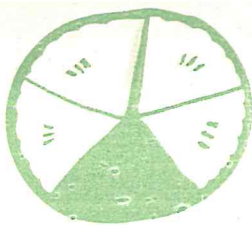
a	b	c	d
6. $\frac{1}{2}$ of 10 = _____	$\frac{1}{2}$ of 8 = _____	$\frac{1}{2}$ of 14 = _____	$\frac{1}{2}$ of 22 = _____
7. $\frac{1}{2}$ of 18 = _____	$\frac{1}{2}$ of 2 = _____	$\frac{1}{6}$ of 36 = _____	$\frac{1}{3}$ of 21 = _____
8. $\frac{1}{3}$ of 3 = _____	$\frac{1}{3}$ of 27 = _____	$\frac{1}{3}$ of 9 = _____	$\frac{1}{3}$ of 15 = _____
9. $\frac{1}{4}$ of 4 = _____	$\frac{1}{5}$ of 20 = _____	$\frac{1}{4}$ of 44 = _____	$\frac{1}{4}$ of 32 = _____
10. $\frac{1}{4}$ of 48 = _____	$\frac{1}{5}$ of 15 = _____	$\frac{1}{2}$ of 12 = _____	$\frac{1}{2}$ of 16 = _____
11. $\frac{1}{8}$ of 16 = _____	$\frac{1}{8}$ of 24 = _____	$\frac{1}{2}$ of 24 = _____	$\frac{1}{3}$ of 33 = _____
12. $\frac{1}{3}$ of 24 = _____	$\frac{1}{6}$ of 12 = _____	$\frac{1}{4}$ of 12 = _____	$\frac{1}{3}$ of 18 = _____

UNIT 5

Write the quotients:

a	b	c	d	e	f
13. $8 \overline{) 56}$	$6 \overline{) 54}$	$7 \overline{) 49}$	$4 \overline{) 36}$	$5 \overline{) 45}$	$7 \overline{) 63}$
14. $7 \overline{) 35}$	$6 \overline{) 42}$	$5 \overline{) 35}$	$8 \overline{) 40}$	$6 \overline{) 48}$	$8 \overline{) 72}$

TOP SCORE: 48 MY SCORE: _____



Lesson 10 — MORE ABOUT FRACTIONS

1. The pie at the top of the page was cut into 5 equal parts. There are only 4 of the five equal parts left, or $\frac{4}{5}$ of the pie.

The number below the line in a fraction is called the **denominator**. In $\frac{4}{5}$ the denominator is 5. The denominator tells the number of equal parts into which the whole has been divided.

The number above the line in a fraction is called the **numerator**. In $\frac{4}{5}$ the numerator is 4. The numerator tells how many of the equal parts you are using.

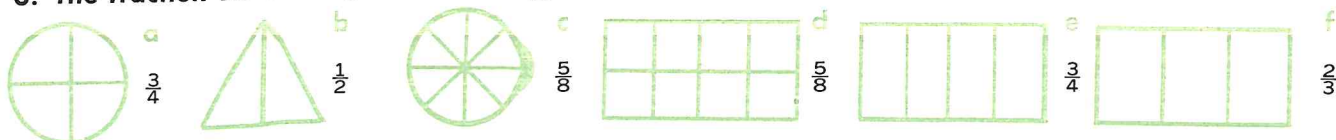
2. In each fraction draw a line around:

a. The denominator

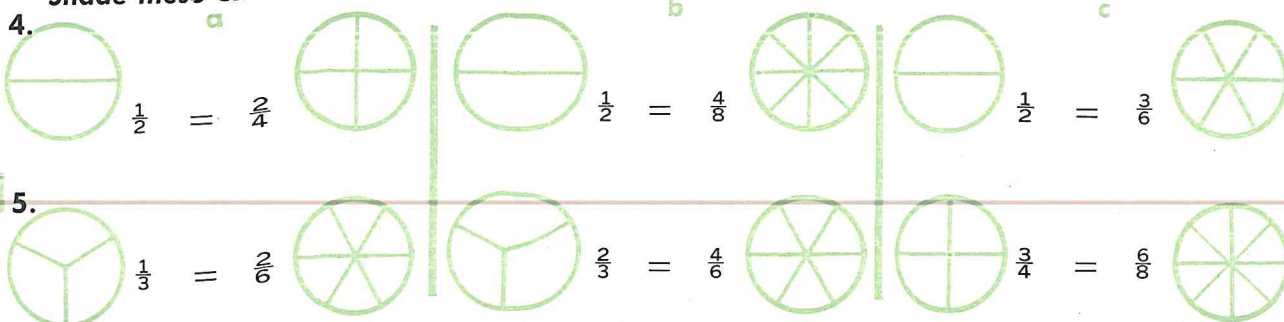
b. The numerator

$\frac{7}{8}$ $\frac{1}{4}$ $\frac{2}{5}$ $\frac{2}{3}$ $\frac{5}{6}$ $\frac{5}{8}$ $\frac{3}{4}$ $\frac{1}{2}$ $\frac{2}{3}$ $\frac{1}{2}$ $\frac{3}{5}$ $\frac{5}{6}$ $\frac{3}{4}$ $\frac{7}{8}$ $\frac{2}{5}$ $\frac{1}{4}$

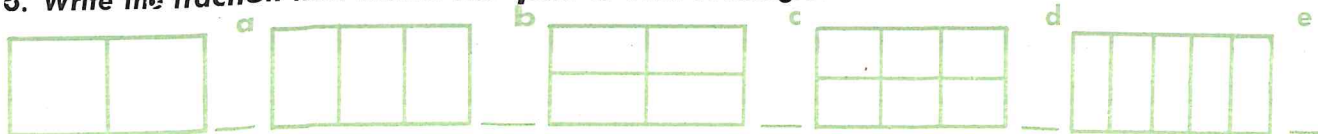
3. The fraction to the right of each figure tells how much to shade:



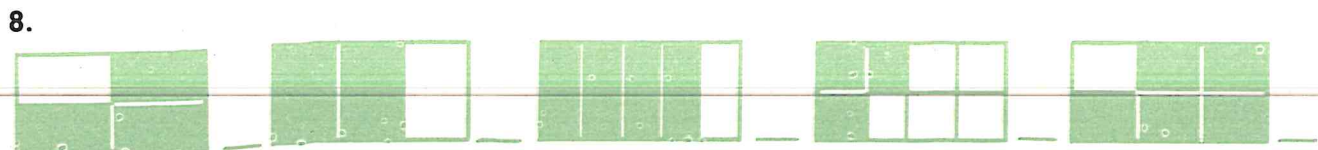
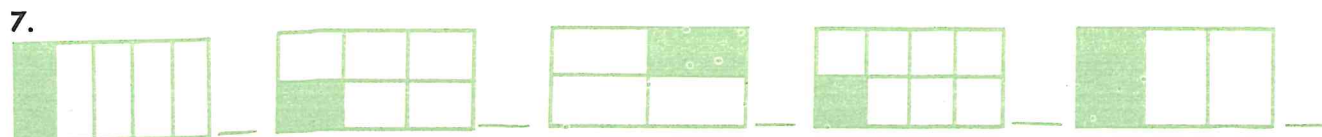
Shade these circles to show:



6. Write the fraction that names one part of each rectangle:



Write the fraction that tells how much of each rectangle is shaded:



Lesson 11 — PRACTICE WITH FRACTIONS

1. Max walks $\frac{1}{3}$ mile south and $\frac{1}{3}$ mile west to go to school. How far does he walk to school?

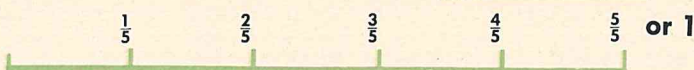
$$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$$

Use the number line
to work the problem:



2. Leo walks $\frac{3}{5}$ mile south and $\frac{1}{5}$ mile east to go to school. How far does Leo walk to school?

Use the number line
to work the problem:



3. Joe walks part of the way home with Lynn. He walks $\frac{2}{5}$ mile with Lynn and $\frac{1}{5}$ mile alone. How far does Joe walk?

Use the number line
to work the problem:

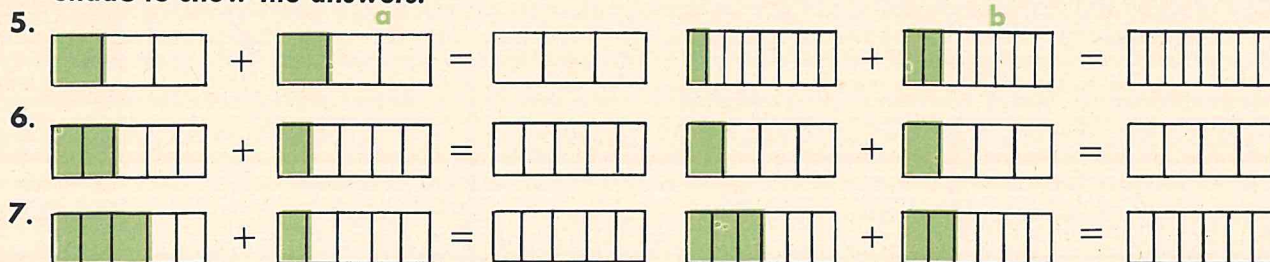


4. Steve walks $\frac{5}{8}$ mile to the bridge, then $\frac{1}{8}$ mile west and $\frac{1}{8}$ mile south. How far does he walk?

Use the number line
to work the problem:



Shade to show the answers:



8. Which is the largest, $\frac{1}{2}$, $\frac{1}{4}$, or $\frac{1}{8}$?

9. Which is smallest, $\frac{1}{2}$, $\frac{1}{4}$, or $\frac{1}{8}$?

10. $\frac{1}{2}$ is the same as $\frac{\quad}{4}$. $\frac{1}{2}$ is the same as $\frac{\quad}{8}$.

11. $\frac{1}{4}$ is the same as $\frac{\quad}{8}$. $\frac{3}{4}$ is the same as $\frac{\quad}{8}$.

12. Which is largest, $\frac{1}{2}$, $\frac{1}{3}$, or $\frac{1}{6}$?

13. Which is smallest, $\frac{1}{2}$, $\frac{1}{3}$, or $\frac{1}{6}$?

14. $\frac{1}{3}$ is the same as $\frac{\quad}{6}$.

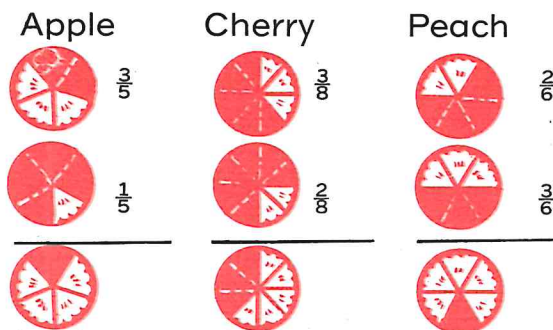
15. $\frac{1}{2}$ is the same as $\frac{\quad}{6}$. $\frac{2}{3}$ is the same as $\frac{\quad}{6}$.

Whole							
$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

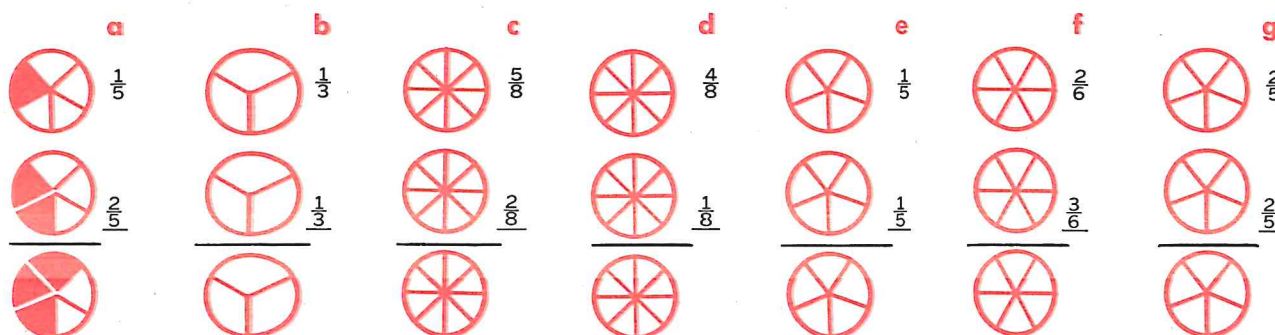
Whole					
$\frac{1}{2}$			$\frac{1}{2}$		
$\frac{1}{3}$		$\frac{1}{3}$		$\frac{1}{3}$	
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

Lesson 12 — ADDING FRACTIONS

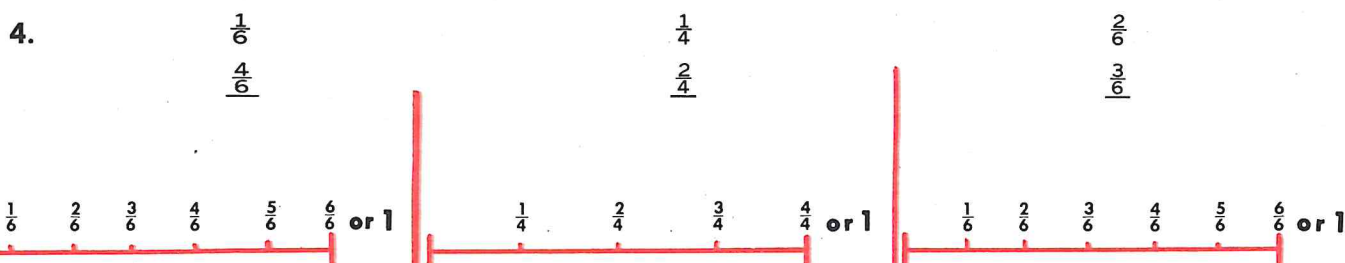
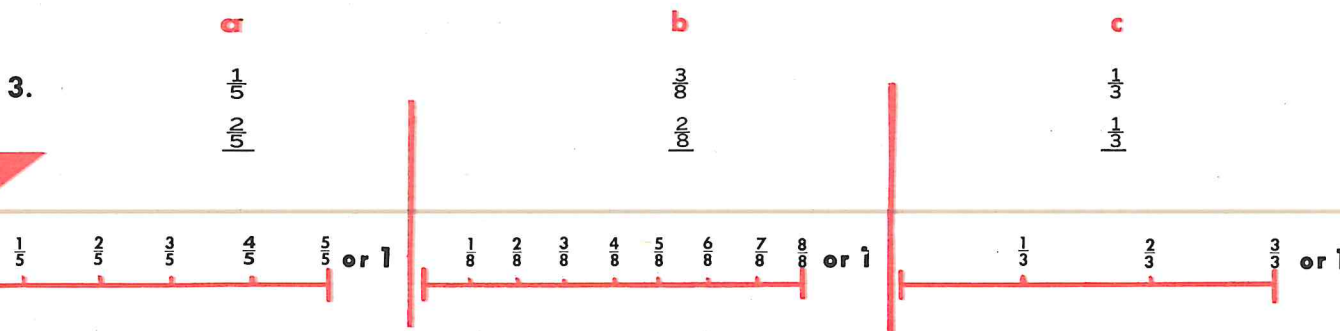
1. Nancy helped clear the tables after the picnic dinner. She placed pieces of the same kind of pie together. Write the fraction that tells how much of each kind of pie was left.



2. Find the sums: Shade the circle in each sum to show the fraction you have written:
(The first three are shaded for you.)



Add. Use the fraction line to find the answers.




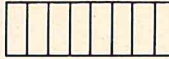
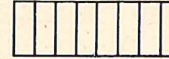



5. Find the sums:



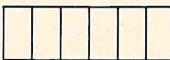





Lesson 13 — ADDING LIKE FRACTIONS

Shade the figures to show the fractional parts to be added. Find the sums. Shade the figure in each answer to show the sum. The first one is finished for you:






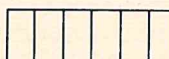
1.  +  =   +  = 

$$\frac{1}{4} + \frac{1}{4} = \frac{2}{4} \qquad \frac{1}{8} + \frac{1}{8} = \frac{\quad}{8}$$



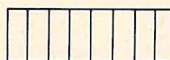

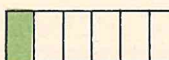

2.  +  =   +  = 

$$\frac{1}{6} + \frac{1}{6} = \frac{\quad}{6} \qquad \frac{2}{8} + \frac{2}{8} = \frac{\quad}{8}$$

Write the fractions that tell how much of the figures are shaded. Find the sums. Shade the figure in each answer to show the sum. The first one is finished for you:





3.  +  =   +  = 





$$\frac{1}{8} + \frac{3}{8} = \frac{4}{8} \qquad \frac{\quad}{\quad} + \frac{\quad}{\quad} = \frac{\quad}{\quad}$$





4.  +  =   +  = 





$$\frac{\quad}{\quad} + \frac{\quad}{\quad} = \frac{\quad}{\quad} \qquad \frac{\quad}{\quad} + \frac{\quad}{\quad} = \frac{\quad}{\quad}$$





Shade the circles to show the fractional parts to be added. Find the sums. Shade the circle in each answer to show the sum. The first problem is finished for you:





5.  $\frac{2}{5}$  $\frac{7}{8}$  $\frac{3}{4}$  $\frac{5}{6}$





 $\frac{3}{5}$  $\frac{1}{8}$  $\frac{1}{4}$  $\frac{1}{6}$

 $\frac{5}{5}$, or 1  $\frac{\quad}{\quad}$  $\frac{\quad}{\quad}$  $\frac{\quad}{\quad}$

6.  $\frac{1}{5}$  $\frac{1}{4}$  $\frac{1}{6}$  $\frac{3}{8}$

 $\frac{2}{5}$  $\frac{1}{4}$  $\frac{2}{6}$  $\frac{1}{8}$

 $\frac{1}{5}$  $\frac{1}{4}$  $\frac{2}{6}$  $\frac{3}{8}$

 $\frac{\quad}{\quad}$  $\frac{\quad}{\quad}$  $\frac{\quad}{\quad}$  $\frac{\quad}{\quad}$

7. Find the sums:

a $\frac{1}{5} + \frac{1}{5} + \frac{1}{5}$

b $\frac{2}{8} + \frac{2}{8} + \frac{3}{8}$

c $\frac{1}{6} + \frac{1}{6} + \frac{3}{6}$

d $\frac{1}{6} + \frac{1}{6} + \frac{2}{6}$

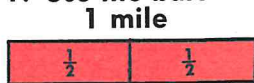
e $\frac{1}{5} + \frac{1}{5} + \frac{2}{5}$

f $\frac{1}{4} + \frac{1}{4} + \frac{2}{4}$

UNIT 5

Lesson 14 — SUBTRACTING LIKE FRACTIONS

1. Use the bars to find the answers: The first two are worked for you:



$$1 = \frac{2}{2}$$



$$1 = \frac{3}{3}$$



a $1 = \frac{\quad}{4}$

b $1 = \frac{\quad}{6}$

c $1 = \frac{\quad}{8}$

d $1 = \frac{\quad}{5}$

2. Peggy lives 1 mile from school. She skated $\frac{1}{4}$ mile, then walked the rest of the way. How far did she walk in going to school? ____ To find how far she walked in going to school, subtract $\frac{1}{4}$ mile from 1 (or $\frac{4}{4}$) mile.

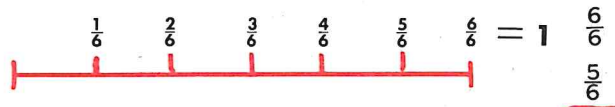
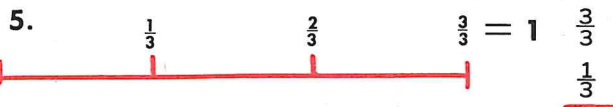
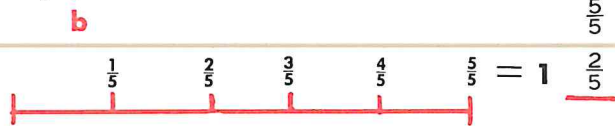
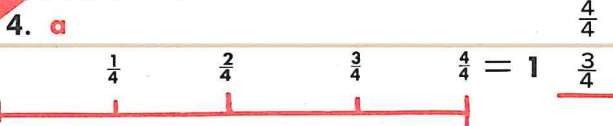
$$\begin{array}{r} \frac{4}{4} \\ - \frac{1}{4} \\ \hline \end{array}$$

3. Pat rides his bicycle 1 mile to school. One morning after riding $\frac{1}{3}$ mile he had a flat tire and had to walk and push his bicycle the rest of the way to school. How far did he have to walk? ____ To find how far he walked, subtract $\frac{1}{3}$ mile from 1 (or $\frac{3}{3}$) mile.

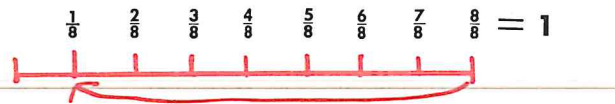
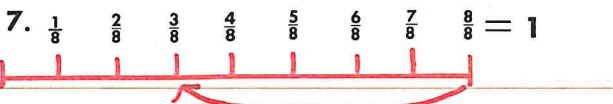
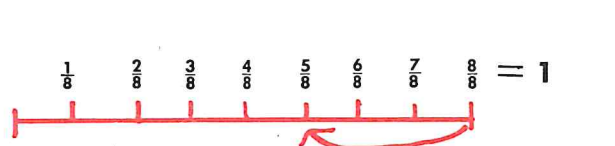
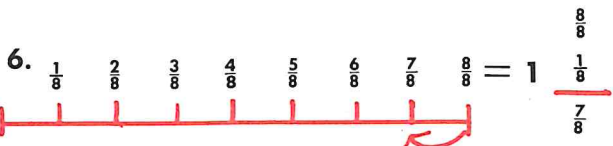
$$\begin{array}{r} \frac{3}{3} \\ - \frac{1}{3} \\ \hline \end{array}$$

5 UNIT

Find the differences. Use the fraction lines to help you:





Write a fraction problem for each fraction line. The first one is done for you:





Lesson 15 — SUBTRACTION OF FRACTIONS


1. Jane's mother cut 5 pies. Jane counted the number of pieces in each pie. Write the missing numerators:

a  $1 = \frac{\quad}{8}$

b  $1 = \frac{\quad}{6}$

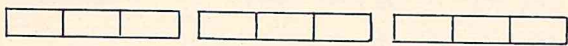
c  $1 = \frac{\quad}{5}$

d  $1 = \frac{\quad}{4}$

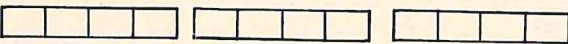
e  $1 = \frac{\quad}{3}$

Shade each bar to show the fraction under it. Write the differences. Shade the bar in each answer to show the fraction you have written. The first one is done:

2. $\frac{3}{3} - \frac{1}{3} = \frac{2}{3}$



3. $\frac{3}{3} - \frac{2}{3} = \frac{\quad}{\quad}$



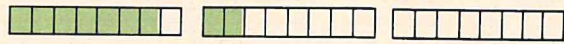
4. $\frac{4}{4} - \frac{1}{4} = \frac{\quad}{\quad}$

Write the fraction that tells how much of each bar is colored. Find the differences. Shade the bar in each answer to show the difference. The first one is done for you:

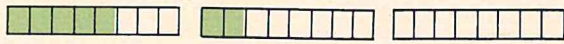
5. $\frac{4}{5} - \frac{3}{5} = \frac{1}{5}$



6. $\frac{\quad}{\quad} - \frac{\quad}{\quad} = \frac{\quad}{\quad}$



7. $\frac{\quad}{\quad} - \frac{\quad}{\quad} = \frac{\quad}{\quad}$



8. $\frac{\quad}{\quad} - \frac{\quad}{\quad} = \frac{\quad}{\quad}$

9. Write the answers:



A pie was cut into 5 pieces. There was $\frac{4}{5}$ of the pie on the plate. Jack took one of the pieces. How much was left? $\frac{\quad}{\quad}$

Another pie had been cut into 4 pieces. $\frac{3}{4}$ was on the plate. Joe took 2 pieces. How much of the pie was left? $\frac{\quad}{\quad}$

One pie had been cut into 8 pieces, and $\frac{5}{8}$ of it was on the plate. Mary took 2 pieces. How much of the pie was left then? $\frac{\quad}{\quad}$

Write the differences:

10. a $\frac{5}{8} - \frac{1}{8} = \frac{\quad}{\quad}$ b $\frac{7}{8} - \frac{4}{8} = \frac{\quad}{\quad}$ c $\frac{5}{5} - \frac{3}{5} = \frac{\quad}{\quad}$ d $\frac{7}{8} - \frac{2}{8} = \frac{\quad}{\quad}$ e $\frac{3}{3} - \frac{1}{3} = \frac{\quad}{\quad}$ f $\frac{2}{5} - \frac{1}{5} = \frac{\quad}{\quad}$ g $\frac{3}{4} - \frac{2}{4} = \frac{\quad}{\quad}$ h $\frac{2}{3} - \frac{1}{3} = \frac{\quad}{\quad}$ i $\frac{3}{8} - \frac{2}{8} = \frac{\quad}{\quad}$ j $\frac{5}{6} - \frac{4}{6} = \frac{\quad}{\quad}$

Lesson 16 — SUBTRACTING FRACTIONS

1. Use the chart to find the answers:

Whole							
$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

a $\frac{2}{4}$ is the same as $\frac{1}{2}$.

b $\frac{4}{8}$ is the same as $\frac{1}{2}$.

c $\frac{2}{8}$ is the same as $\frac{1}{4}$.

d $\frac{6}{8}$ is the same as $\frac{3}{4}$.

2. Use the chart to find the answers:

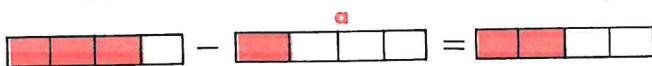
Whole					
$\frac{1}{2}$			$\frac{1}{2}$		
$\frac{1}{3}$		$\frac{1}{3}$		$\frac{1}{3}$	
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

a $\frac{3}{6}$ is the same as $\frac{1}{2}$.

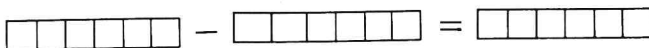
b $\frac{2}{6}$ is the same as $\frac{1}{3}$.

c $\frac{4}{6}$ is the same as $\frac{2}{3}$.

Shade each bar to show the fraction under it. Write the difference two ways. Shade one bar in each answer to show the fractions you have written. Here is one done for you:



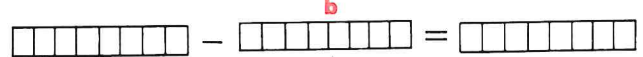
3. $\frac{3}{4} - \frac{1}{4} = \frac{2}{4}$ or $\frac{1}{2}$



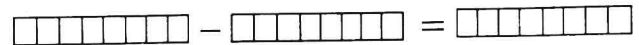
4. $\frac{6}{6} - \frac{3}{6} =$ _____



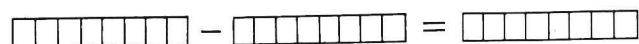
5. $\frac{5}{6} - \frac{3}{6} =$ _____



$\frac{8}{8} - \frac{4}{8} =$ _____



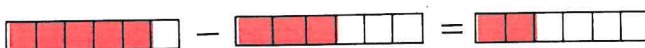
$\frac{7}{8} - \frac{5}{8} =$ _____



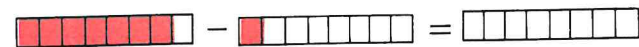
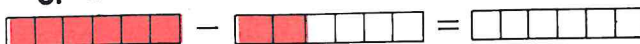
$\frac{5}{8} - \frac{1}{8} =$ _____



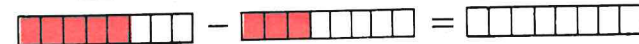
Write the fraction that tells how much of each bar is colored. Find the differences. Shade the bar in each answer to show the difference. The first one is done for you:



6. $\frac{5}{6} - \frac{3}{6} = \frac{2}{6}$ or $\frac{1}{3}$



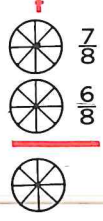
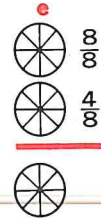
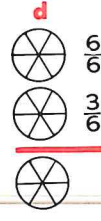
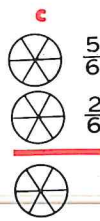
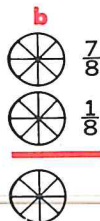
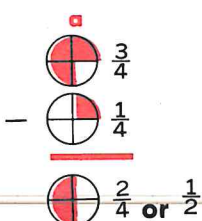
_____ - _____ = _____



_____ - _____ = _____

7. _____ - _____ = _____

Shade the fractional parts of each circle for the fraction. Find the differences. Shade the circle in each answer to show the difference. The first problem is done for you:



Lesson 17 — FRACTIONAL REMAINDERS

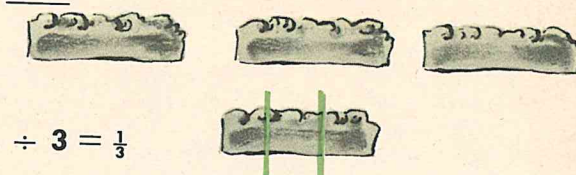
1. Mary had 4 candy bars to divide equally among her three girl friends. How many candy bars did each girl receive? $4 \div 3 = \underline{\hspace{1cm}}$

$$\begin{array}{r} 1 \\ 3 \overline{) 4} \\ \underline{3} \\ 1 \text{ left over} \end{array}$$

Mary gave each girl 1 candy bar. Then she divided the 1 bar that was left into 3 equal parts.

$$\begin{array}{r} 1\frac{1}{3} \\ 3 \overline{) 4} \\ \underline{3} \\ 1 \end{array}$$

$1 \div 3 = \frac{1}{3}$



Each girl received 1 whole candy bar and $\frac{1}{3}$ candy bar, or $1\frac{1}{3}$ candy bars.

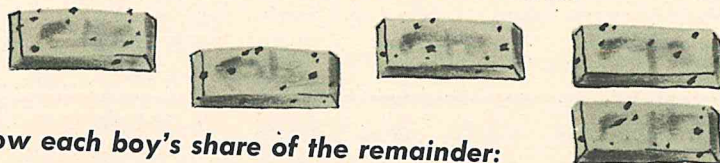
2. Bob divided 5 candy bars equally among 3 boys. How many bars did each boy receive? $\underline{\hspace{1cm}}$

$$\begin{array}{r} 1\frac{2}{3} \\ 3 \overline{) 5} \\ \underline{3} \\ 2 \end{array}$$

$2 \div 3 = \frac{2}{3}$

$$\begin{array}{r} 1 \\ 3 \overline{) 5} \\ \underline{3} \\ 2 \text{ left over} \end{array}$$

Divide the 2 bars left over into thirds:



$5 \div 3 = \underline{\hspace{1cm}}$

Draw rings to show each boy's share of the remainder:

Each boy received 1 candy bar and $\frac{2}{3}$ candy bar or $\underline{\hspace{1cm}}$ candy bars.

3. Jerry has 17 cookies to divide equally among 4 boys. What is each boy's share? $\underline{\hspace{1cm}}$

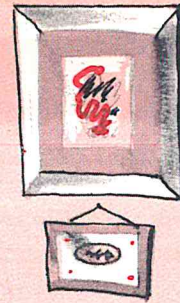
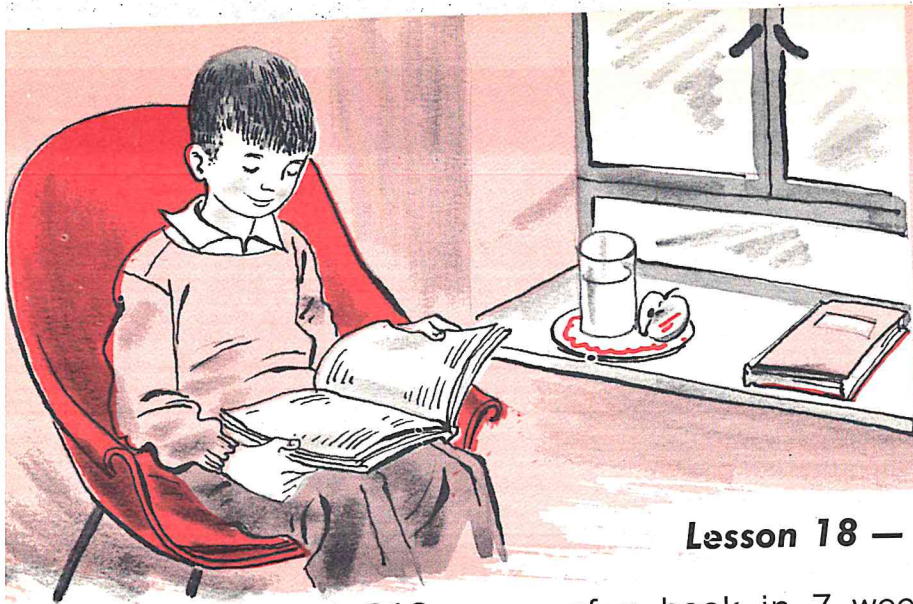
$$\begin{array}{r} 4 \overline{) 17} \\ \underline{16} \\ 1 \end{array}$$

A division problem is usually not completed unless the remainder is shown as a fraction. Sometimes, however, a fraction is not sensible. Suppose you were asked to divide 17 boys into 4 equal groups. Your result would be 4 groups of 4 boys (16 boys) with one boy left over. You would not write $4\frac{1}{4}$ boys as the quotient, because it would not be a sensible answer. When the remainder can be sensibly divided, write the remainder as a fraction.

Divide. Express the remainders as fractions:

4. $\overset{a}{2} \overline{) 7}$ $\overset{b}{5} \overline{) 12}$ $\overset{c}{3} \overline{) 29}$ $\overset{d}{5} \overline{) 27}$ $\overset{e}{4} \overline{) 97}$ $\overset{f}{2} \overline{) 913}$ $\overset{g}{3} \overline{) 73}$ $\overset{h}{3} \overline{) 101}$

5. $6 \overline{) 118}$ $3 \overline{) 167}$ $4 \overline{) 190}$ $8 \overline{) 793}$ $6 \overline{) 230}$ $2 \overline{) 705}$ $6 \overline{) 177}$ $4 \overline{) 138}$



Lesson 18 — REMAINDERS AS FRACTIONS

1. Bob read 316 pages of a book in 7 weeks. Find how many pages he read in a week if he read the same number of pages each week.

Work this problem like the other division problems. Then look at the remainder. The remainder is 1. Does this mean there was one page left over? No, Bob finished the whole book. A page can be divided into equal parts, so you can write the remainder as a fraction. $1 \div 7 = \frac{1}{7}$. This completes the division, so $\frac{1}{7}$ is part of the quotient.

$$\begin{array}{r} 7 \overline{) 316} \\ \underline{280} \\ 36 \\ \underline{35} \\ 1 \end{array} \quad \begin{array}{l} \frac{1}{7} \overline{) 45\frac{1}{7}} \\ 40 \times 7 \\ 5 \times 7 \\ 1 \div 7 = \frac{1}{7} \end{array}$$

Add $\frac{1}{7}$ to the whole part of the quotient: $40 + 5 + \frac{1}{7} = 45 + \frac{1}{7} = 45\frac{1}{7}$.

Bob read _____ pages each week.

When the dividend is smaller than the divisor, the quotient may be expressed as a fraction: $5 \div 9 = \frac{5}{9}$, $4 \div 7 = \frac{4}{7}$, and so on.

5 UNIT

2. Write the quotients to each of the following problems as fractions:

$$2 \div 9 = \frac{a}{b} \quad 7 \div 8 = \frac{b}{c} \quad 2 \div 7 = \frac{c}{d} \quad 7 \div 9 = \frac{d}{e}$$

Find the quotients. Write the remainders as fractions:

$$3. \begin{array}{l} \frac{a}{b} \overline{) 397} \\ \frac{b}{c} \overline{) 230} \\ \frac{c}{d} \overline{) 301} \\ \frac{d}{e} \overline{) 138} \\ \frac{e}{f} \overline{) 535} \\ \frac{f}{g} \overline{) 174} \\ \frac{g}{h} \overline{) 319} \end{array}$$

$$4. \begin{array}{l} 3 \overline{) 473} \\ 8 \overline{) 573} \\ 6 \overline{) 729} \\ 9 \overline{) 217} \\ 7 \overline{) 890} \\ 7 \overline{) 156} \\ 4 \overline{) 983} \end{array}$$

Lesson 19 — PRACTICE

Find the sums:

a	b	c	d	e	f	g	h
1. $\begin{array}{r} 256 \\ 23 \\ \hline 376 \end{array}$	$\begin{array}{r} 37 \\ 284 \\ \hline 87 \end{array}$	$\begin{array}{r} 98 \\ 250 \\ \hline 376 \end{array}$	$\begin{array}{r} 460 \\ 37 \\ \hline 64 \end{array}$	$\begin{array}{r} \$4.25 \\ 3.87 \\ \hline 1.45 \end{array}$	$\begin{array}{r} \$2.75 \\ 4.37 \\ \hline 1.69 \end{array}$	$\begin{array}{r} \$2.00 \\ 4.75 \\ \hline 2.98 \end{array}$	$\begin{array}{r} \$5.25 \\ 1.96 \\ \hline 2.67 \end{array}$

Find the differences:

2. $\begin{array}{r} 789 \\ 247 \\ \hline \end{array}$	$\begin{array}{r} 474 \\ 285 \\ \hline \end{array}$	$\begin{array}{r} 829 \\ 296 \\ \hline \end{array}$	$\begin{array}{r} 874 \\ 627 \\ \hline \end{array}$	$\begin{array}{r} 760 \\ 346 \\ \hline \end{array}$	$\begin{array}{r} 559 \\ 260 \\ \hline \end{array}$	$\begin{array}{r} \$9.35 \\ 2.42 \\ \hline \end{array}$	$\begin{array}{r} \$7.75 \\ 3.69 \\ \hline \end{array}$
3. $\begin{array}{r} 500 \\ 216 \\ \hline \end{array}$	$\begin{array}{r} 652 \\ 428 \\ \hline \end{array}$	$\begin{array}{r} 825 \\ 668 \\ \hline \end{array}$	$\begin{array}{r} 976 \\ 398 \\ \hline \end{array}$	$\begin{array}{r} 935 \\ 374 \\ \hline \end{array}$	$\begin{array}{r} 905 \\ 479 \\ \hline \end{array}$	$\begin{array}{r} \$4.00 \\ 2.68 \\ \hline \end{array}$	$\begin{array}{r} \$6.25 \\ 2.86 \\ \hline \end{array}$

Find the products:

4. $\begin{array}{r} \$6.25 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 796 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 803 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 456 \\ 46 \\ \hline \end{array}$	$\begin{array}{r} \$2.87 \\ 60 \\ \hline \end{array}$	$\begin{array}{r} 658 \\ 75 \\ \hline \end{array}$	$\begin{array}{r} 491 \\ 83 \\ \hline \end{array}$	$\begin{array}{r} 210 \\ 92 \\ \hline \end{array}$
5. $\begin{array}{r} \$3.46 \\ 90 \\ \hline \end{array}$	$\begin{array}{r} 789 \\ 51 \\ \hline \end{array}$	$\begin{array}{r} 367 \\ 97 \\ \hline \end{array}$	$\begin{array}{r} 675 \\ 56 \\ \hline \end{array}$	$\begin{array}{r} \$4.90 \\ 70 \\ \hline \end{array}$	$\begin{array}{r} 859 \\ 89 \\ \hline \end{array}$	$\begin{array}{r} 139 \\ 76 \\ \hline \end{array}$	$\begin{array}{r} 367 \\ 70 \\ \hline \end{array}$

UNIT 5

Find the quotients. Express the remainders as fractions:

6. $3 \overline{)320}$ $4 \overline{)890}$ $5 \overline{)595}$ $6 \overline{)732}$ $7 \overline{)987}$ $8 \overline{)969}$ $9 \overline{)730}$ $8 \overline{)450}$

7. $7 \overline{)849}$ $6 \overline{)840}$ $5 \overline{)490}$ $4 \overline{)578}$ $3 \overline{)693}$ $4 \overline{)450}$ $5 \overline{)448}$ $6 \overline{)385}$



Lesson 20 — DIVIDING THREE-PLACE NUMBERS BY TWO-PLACE NUMBERS

1. Twelve girls sold 192 tickets to the school play. If each girl sold the same number of tickets, how many tickets did each girl sell? _____

- 1 First you subtract 10 twelves, or 120. You have 72 left. You cannot subtract another 10 twelves because $120 > 72$.

$$\begin{array}{r} 6 \\ 10 \} 16 \\ 12 \overline{) 192} \\ \underline{120} \\ 72 \\ \underline{72} \\ 0 \end{array}$$

10×12
 6×12

- 2 In order to finish the problem, you need to multiply 12 by a number less than 10 to get a product that will not be more than 72. To find such a number, round off 12 (the divisor) to the nearest 10. This will make your estimating easier. 12 rounded to the nearest ten is 10. **Think:** $7 \times 10 = 70$, which is less than 72. Try 7. $7 \times 12 = 84$. But $84 > 72$, and you cannot subtract. Suppose you try 6. $6 \times 12 = 72$. $72 = 72$, so you can subtract. There is no remainder, so your division is finished.

Work Space

2. Fourteen boys sold 168 tickets to the school play. How many tickets did each boy sell if each boy sold the same number of tickets? _____

5 UNIT

Find the quotients:

a

b

c

d

e

f

g

3. $12 \overline{) 132}$ $11 \overline{) 187}$ $17 \overline{) 204}$ $13 \overline{) 182}$ $12 \overline{) 180}$ $16 \overline{) 288}$ $14 \overline{) 196}$

4. $11 \overline{) 176}$ $14 \overline{) 210}$ $12 \overline{) 204}$ $13 \overline{) 221}$ $12 \overline{) 168}$ $11 \overline{) 143}$ $19 \overline{) 228}$

Lesson 21 — FRACTIONAL REMAINDERS

1. In a small cannery 237 apples were cooked to fill 26 cans of applesauce. How many apples were needed for each can? _____

- 1 See if you can subtract ten 26's all at once. $10 \times 26 = 260$. $260 > 237$ so you cannot subtract. You need to multiply 26 by a number less than 10 to get a product that is not more than 237. To find such a number, round 26 (the divisor) to the nearest 10. This will make the estimating easier. 26 rounded to the nearest 10 is 30.

$$\begin{array}{r} 26 \overline{)237} \\ \underline{182} \\ 55 \\ \underline{52} \\ 3 \end{array} \quad \begin{array}{l} 7 \times 26 \\ 2 \times 26 \end{array}$$

Think: $8 \times 30 = 240$, which is more than 237. Try: $7 \times 30 = 210$, $210 < 237$. Try: $7 \times 26 = 182$. $237 - 182 = 55$.

- 2 You can see that you can subtract 2 more 26's because $2 \times 26 = 52$. That is, you could have subtracted 9 twenty-sixes at once.
- 3 Rounding the divisor to the nearest 10 does not always give the exact quotient. When it does not, it will usually give you a smaller quotient than the actual quotient, so that you can continue the division without erasing. With practice you will learn to estimate more closely to the actual quotient.

$55 - 52 = 3$. The remainder is 3 and $3 \div 26 = \frac{3}{26}$. Write the fraction $\frac{3}{26}$ as part of the quotient. The quotient is $9 + \frac{3}{26}$ and is written $9\frac{3}{26}$.

2. Bob said that he wrote a story of 241 words in 28 minutes. How many words a minute did he average? _____

Work Space

UNIT 5

Divide. Write the remainders as fractions:

a

b

c

d

e

f

3. $39 \overline{)322}$

$47 \overline{)341}$

$38 \overline{)349}$

$26 \overline{)167}$

$29 \overline{)153}$

$41 \overline{)338}$

Lesson 22 — PRACTICE DIVIDING

Find the quotients:

a

1. $3 \overline{)48}$

b

$6 \overline{)96}$

c

$4 \overline{)64}$

d

$4 \overline{)370}$

e

$3 \overline{)519}$

f

$5 \overline{)490}$

g

$3 \overline{)270}$

2. $4 \overline{)92}$

$2 \overline{)58}$

$3 \overline{)75}$

$3 \overline{)650}$

$4 \overline{)768}$

$6 \overline{)919}$

$4 \overline{)988}$

3. $2 \overline{)87}$

$3 \overline{)68}$

$4 \overline{)89}$

$3 \overline{)340}$

$6 \overline{)846}$

$4 \overline{)450}$

$7 \overline{)780}$

5 UNIT

4. $4 \overline{)37}$

$6 \overline{)56}$

$7 \overline{)69}$

$6 \overline{)402}$

$6 \overline{)726}$

$2 \overline{)192}$

$5 \overline{)335}$

5. $3 \overline{)324}$

$5 \overline{)545}$

$9 \overline{)927}$

$12 \overline{)168}$

$26 \overline{)223}$

$18 \overline{)252}$

$11 \overline{)176}$

6. $5 \overline{)519}$

$7 \overline{)723}$

$8 \overline{)835}$

$37 \overline{)444}$

$39 \overline{)479}$

$28 \overline{)420}$

$46 \overline{)644}$



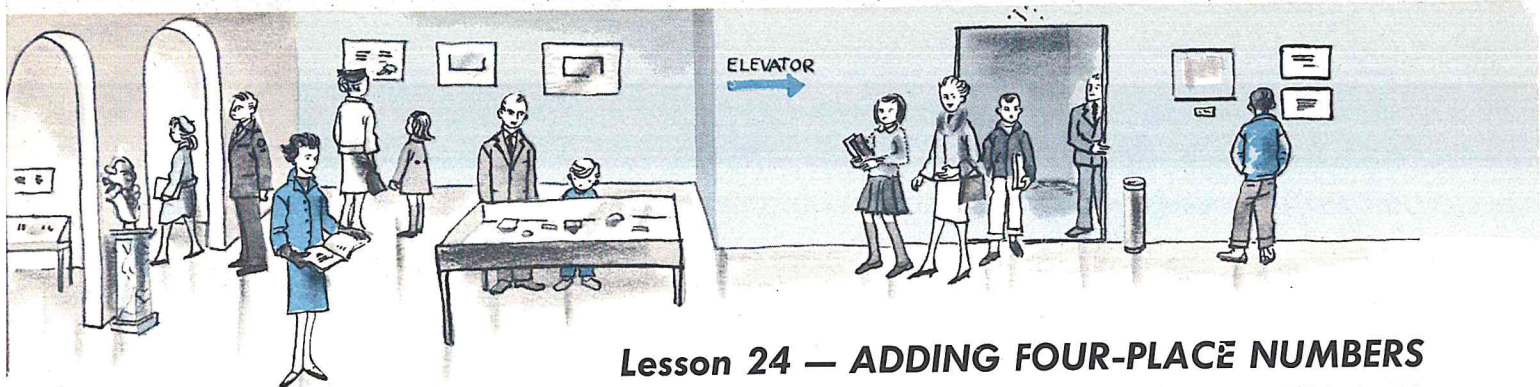
Lesson 23 — ADDING TWO AND THREE-PLACE NUMBERS

- At the park 15 children were playing ball, 35 were swimming, 47 were in the wading pool, and 22 were riding on the merry-go-round. How many children were at the park? _____
- On Monday 42 children swam in the pool, on Tuesday 59, on Wednesday 35, and on Thursday 28. How many children swam on these four days? _____
- Softball games are played at night. The attendance for four nights last week was 127, 306, 510, and 294. What was the total attendance for the four nights? _____
- The attendants at the park worked 240 hours the first week in June, 175 hours the second week, 186 hours the third week, and 215 hours the fourth week. How many hours did they work? _____

Work Space

Find the sums:

	a	b	c	d	e	f	g	h	i	i
5.	35	26	69	47	230	409	521	376	\$3.46	\$.27
	40	75	31	34	308	143	692	380	.94	.54
	29	82	70	82	531	574	229	168	8.01	6.70
	<u>67</u>	<u>19</u>	<u>18</u>	<u>20</u>	<u>187</u>	<u>732</u>	<u>890</u>	<u>479</u>	<u>2.37</u>	<u>.41</u>
6.	80	17	38	52	129	607	830	715	\$1.50	\$.89
	15	81	70	16	406	415	582	514	8.29	.65
	36	29	99	40	615	106	458	159	3.67	.90
	<u>79</u>	<u>33</u>	<u>12</u>	<u>34</u>	<u>369</u>	<u>627</u>	<u>600</u>	<u>675</u>	<u>.76</u>	<u>8.37</u>



Lesson 24 — ADDING FOUR-PLACE NUMBERS

Work Space

- Records showed that 1092 people visited the museum in May, 2078 in June, 3650 in July, and 2341 in August. How many people visited the museum during these months? _____
- The most popular display in the museum was the pioneer exhibit. In August 2129 people visited it, in September 1967, in October 1005, and in November 2270. How many people visited the pioneer exhibit in the four months? _____
- In one room 2741 articles are exhibited, in another 1290, in a third 2605, and in a fourth 3087 articles. How many articles are exhibited? _____
- In the first week in August \$29.50 was collected in fees, in the second week \$21.65, in the third week \$24.05, and in the fourth week \$23.90. How much was collected in fees in August? _____

Find the sums:

5 UNIT

	a	b	c	d	e	f	g
5.	1947	2608	3570	1298	2048	4159	3260
	3061	1942	1826	2799	1596	1975	1919
	2856	3485	2457	1814	1388	2637	2086
	<u>1378</u>	<u>1790</u>	<u>1902</u>	<u>3141</u>	<u>3107</u>	<u>1056</u>	<u>1400</u>
6.	1371	1298	2037	3465	4005	1673	3984
	2937	3604	2184	1356	137	58	39
	1593	1323	3875	1232	964	797	76
	<u>2448</u>	<u>2497</u>	<u>1207</u>	<u>2160</u>	<u>83</u>	<u>2805</u>	<u>1451</u>
	a	b	c	d	e	f	
7.	\$45.01	\$26.89	\$15.35	\$26.70	\$ 8.26	\$18.79	
	16.97	15.01	37.49	19.95	64.57	16.07	
	29.45	17.64	28.66	38.64	.93	23.65	
	<u>13.39</u>	<u>34.53</u>	<u>14.73</u>	<u>13.87</u>	<u>.65</u>	<u>39.31</u>	

Lesson 25 — ADDING FIVE-PLACE NUMBERS

Work Space

1. In a recent year there were 19,947 Indians in California, 12,533 Indians in Minnesota, and 16,606 Indians in Montana. What was the total Indian population of these three states? _____
2. Jane learned some facts about visitors to the Statue of Liberty. One month there were 72,648 visitors at the Statue, and the following month 68,425. What was the number of visitors for two months? _____
3. There are several towns near Plainville. Sunnydale has a population of 15,204; Strong City, 27,791; and Hadley, 56,500. How many people live in these three towns? _____
4. There are two large towns near Hadley. Greenridge has a population of 56,798 and Harrison 49,365. What is the total population of these towns? _____
5. The children were studying about Illinois. They learned that Charleston has a population of 10,505; Franklin Park, 18,322; and Oak Park, 61,093. What is the total population of these three towns? _____

Find the sums:

a

$$\begin{array}{r} 6. \ 50,134 \\ \quad 47,745 \\ \hline \end{array}$$

b

$$\begin{array}{r} 13,254 \\ \quad 68,975 \\ \hline \end{array}$$

c

$$\begin{array}{r} 70,396 \\ \quad 29,758 \\ \hline \end{array}$$

d

$$\begin{array}{r} 43,768 \\ \quad 21,590 \\ \hline \end{array}$$

e

$$\begin{array}{r} 16,761 \\ \quad 72,349 \\ \hline \end{array}$$

7.

$$\begin{array}{r} 35,647 \\ \quad 41,023 \\ \quad 23,108 \\ \hline \end{array}$$

$$\begin{array}{r} 16,381 \\ \quad 30,275 \\ \quad 23,143 \\ \hline \end{array}$$

$$\begin{array}{r} 40,837 \\ \quad 27,841 \\ \quad 31,210 \\ \hline \end{array}$$

$$\begin{array}{r} 14,708 \\ \quad 26,873 \\ \quad 32,314 \\ \hline \end{array}$$

$$\begin{array}{r} 31,970 \\ \quad 24,864 \\ \quad 32,391 \\ \hline \end{array}$$

UNIT 5

TOP SCORE: 15 MY SCORE: _____



Lesson 26 — SUBTRACTING FIVE-PLACE NUMBERS

Work Space

1. Mt. McKinley, the highest point in North America, is 20,320 feet high. Mt. Foraker, in the same park, is 17,400 feet high. How many feet higher is Mt. McKinley than Mt. Foraker? _____
2. Mt. Rainier in Washington is 14,410 feet high. How many feet higher is Mt. McKinley (20,320 feet) than Mt. Rainier? _____
3. Mauna Kea, an extinct volcano in Hawaii, is 13,784 feet above sea level. Mauna Loa, the largest active volcano, is 13,680 feet above sea level. It is often called the Twin of Mauna Kea. How many feet higher is Mauna Kea than Mauna Loa? _____
4. There are 96,935 miles of rural roads in Nebraska and 71,596 miles in Colorado. How many more miles of rural roads are there in Nebraska than in Colorado? _____
5. Key West, Florida, had a population of 33,956 in 1960 and 26,433 in 1950. How many more people lived in Key West in 1960 than in 1950? _____
6. There are several large stadiums in the United States. Soldier Field in Chicago seats 84,677 people and the Cotton Bowl in Dallas, Texas, seats 75,504. How many more people can be seated at Soldier Field than at the Cotton Bowl? _____

Find the differences:

	a	b	c	d	e	f
7.	$\begin{array}{r} 38,675 \\ - 27,465 \\ \hline \end{array}$	$\begin{array}{r} 69,570 \\ - 36,300 \\ \hline \end{array}$	$\begin{array}{r} 43,987 \\ - 23,675 \\ \hline \end{array}$	$\begin{array}{r} 12,450 \\ - 10,326 \\ \hline \end{array}$	$\begin{array}{r} 51,628 \\ - 20,486 \\ \hline \end{array}$	$\begin{array}{r} 76,165 \\ - 42,723 \\ \hline \end{array}$
8.	$\begin{array}{r} 92,421 \\ - 81,265 \\ \hline \end{array}$	$\begin{array}{r} 19,630 \\ - 14,489 \\ \hline \end{array}$	$\begin{array}{r} 26,842 \\ - 12,497 \\ \hline \end{array}$	$\begin{array}{r} 87,139 \\ - 52,685 \\ \hline \end{array}$	$\begin{array}{r} 37,624 \\ - 26,931 \\ \hline \end{array}$	$\begin{array}{r} 55,719 \\ - 42,926 \\ \hline \end{array}$
9.	$\begin{array}{r} 34,609 \\ - 16,401 \\ \hline \end{array}$	$\begin{array}{r} 41,922 \\ - 26,715 \\ \hline \end{array}$	$\begin{array}{r} 70,865 \\ - 65,423 \\ \hline \end{array}$	$\begin{array}{r} 33,987 \\ - 16,626 \\ \hline \end{array}$	$\begin{array}{r} 56,978 \\ - 42,435 \\ \hline \end{array}$	$\begin{array}{r} 69,123 \\ - 41,904 \\ \hline \end{array}$

Lesson 27 — PRACTICE

Find the sums:

a	b	c	d	e	f
1. $\begin{array}{r} \$24.29 \\ 23.95 \\ 16.98 \\ \hline \end{array}$	$\begin{array}{r} \$34.55 \\ 25.45 \\ 13.04 \\ \hline \end{array}$	$\begin{array}{r} \$24.73 \\ 27.48 \\ 36.49 \\ \hline \end{array}$	$\begin{array}{r} \$13.84 \\ 37.64 \\ 19.98 \\ \hline \end{array}$	$\begin{array}{r} 2597 \\ 1323 \\ 3606 \\ \hline \end{array}$	$\begin{array}{r} 3537 \\ 2173 \\ 1306 \\ \hline \end{array}$
2. $\begin{array}{r} 22,467 \\ 21,359 \\ \hline \end{array}$	$\begin{array}{r} 22,185 \\ 13,237 \\ \hline \end{array}$	$\begin{array}{r} 41,087 \\ 22,193 \\ \hline \end{array}$	$\begin{array}{r} 23,542 \\ 52,107 \\ \hline \end{array}$	$\begin{array}{r} 1236 \\ 5347 \\ \hline \end{array}$	$\begin{array}{r} 21,146 \\ 43,265 \\ \hline \end{array}$

Find the differences:

a	b	c	d	e	f	g
3. $\begin{array}{r} 70 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ 57 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 18 \\ \hline \end{array}$	$\begin{array}{r} 96 \\ 32 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ 25 \\ \hline \end{array}$	$\begin{array}{r} 758 \\ 579 \\ \hline \end{array}$	$\begin{array}{r} 849 \\ 384 \\ \hline \end{array}$
4. $\begin{array}{r} \$50.83 \\ 23.68 \\ \hline \end{array}$	$\begin{array}{r} \$45.03 \\ 13.87 \\ \hline \end{array}$	$\begin{array}{r} \$49.05 \\ 18.70 \\ \hline \end{array}$	$\begin{array}{r} \$68.06 \\ 42.18 \\ \hline \end{array}$	$\begin{array}{r} 34,675 \\ 18,569 \\ \hline \end{array}$	$\begin{array}{r} 86,740 \\ 34,628 \\ \hline \end{array}$	$\begin{array}{r} 42,367 \\ 22,691 \\ \hline \end{array}$

Find the products:

a	b	c	d	e	f	g	h
5. $\begin{array}{r} 512 \\ 19 \\ \hline \end{array}$	$\begin{array}{r} 743 \\ 28 \\ \hline \end{array}$	$\begin{array}{r} 816 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 295 \\ 46 \\ \hline \end{array}$	$\begin{array}{r} 347 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 618 \\ 42 \\ \hline \end{array}$	$\begin{array}{r} 347 \\ 34 \\ \hline \end{array}$	$\begin{array}{r} 259 \\ 17 \\ \hline \end{array}$
6. $\begin{array}{r} 608 \\ 68 \\ \hline \end{array}$	$\begin{array}{r} 863 \\ 90 \\ \hline \end{array}$	$\begin{array}{r} 529 \\ 23 \\ \hline \end{array}$	$\begin{array}{r} 215 \\ 34 \\ \hline \end{array}$	$\begin{array}{r} 512 \\ 85 \\ \hline \end{array}$	$\begin{array}{r} 608 \\ 56 \\ \hline \end{array}$	$\begin{array}{r} 374 \\ 67 \\ \hline \end{array}$	$\begin{array}{r} 479 \\ 90 \\ \hline \end{array}$

Find the quotients:

a	b	c	d	e	f	g
7. $9 \overline{)657}$	$8 \overline{)856}$	$7 \overline{)784}$	$6 \overline{)656}$	$5 \overline{)529}$	$4 \overline{)464}$	$7 \overline{)754}$

UNIT 5

Lesson 28 — REVIEW

Work Space

1. A grocery boy dusted two shelves of canned vegetables. One shelf was 7 feet 5 inches long and the other shelf was 8 feet 6 inches long. How many feet of shelves did he dust? ____ ft. ____ in.

2. Change to smaller units:

a 5 qt. = ____ pt. **b** 4 bu. = ____ pk. **c** 5 pt. = ____ c. **d** 4 ft. = ____ in.

3. Change to larger units:

9 ft. = ____ yd. 16 oz. = ____ lb. 8 c. = ____ pt. 36 in. = ____ yd.

4. Write the answers:

$\frac{1}{2}$ of 18 = ____ $\frac{1}{4}$ of 28 = ____ $\frac{1}{3}$ of 15 = ____ $\frac{1}{4}$ of 48 = ____

Find the sums:

a	b	c	d	e	f	g
5. $\begin{array}{r} 360 \\ 425 \\ 751 \\ 237 \\ \hline \end{array}$	$\begin{array}{r} 407 \\ 623 \\ 562 \\ 847 \\ \hline \end{array}$	$\begin{array}{r} 729 \\ 32 \\ 840 \\ 287 \\ \hline \end{array}$	$\begin{array}{r} 3875 \\ 4027 \\ 1309 \\ 4783 \\ \hline \end{array}$	$\begin{array}{r} 8752 \\ 9070 \\ 3258 \\ 1503 \\ \hline \end{array}$	$\begin{array}{r} 27,059 \\ 35,403 \\ 14,070 \\ \hline \end{array}$	$\begin{array}{r} 38,704 \\ 21,578 \\ 18,073 \\ \hline \end{array}$

6. $\begin{array}{r} \frac{7}{8} \\ \frac{1}{8} \\ \hline \end{array}$ $\begin{array}{r} \frac{2}{4} \\ \frac{1}{4} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{3} \\ \frac{2}{3} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{6} \\ \frac{1}{6} \\ \frac{3}{6} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{5} \\ \frac{1}{5} \\ \frac{1}{5} \\ \hline \end{array}$ $\begin{array}{r} 8 \text{ lb. } 7 \text{ oz.} \\ 4 \text{ lb. } 4 \text{ oz.} \\ \hline \end{array}$ $\begin{array}{r} 7 \text{ ft. } 4 \text{ in.} \\ 5 \text{ ft. } 5 \text{ in.} \\ \hline \end{array}$

5 UNIT

7. Find the differences:

$\begin{array}{r} 2 \\ 5 \\ \frac{1}{5} \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 8 \\ \frac{5}{8} \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 6 \\ \frac{6}{10} \\ \hline \end{array}$	$\begin{array}{r} \frac{3}{4} \\ \frac{1}{4} \\ \hline \end{array}$	$\begin{array}{r} \frac{3}{3} \\ \frac{1}{3} \\ \hline \end{array}$	$\begin{array}{r} 3 \text{ yd. } 2 \text{ ft.} \\ 1 \text{ yd. } 1 \text{ ft.} \\ \hline \end{array}$	$\begin{array}{r} 87,043 \\ 28,578 \\ \hline \end{array}$
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8. Find the products:

a	b	c	d	e	f
$\begin{array}{r} 4 \text{ bu. } 1 \text{ pk.} \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \text{ gal. } 1 \text{ qt.} \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 327 \\ 63 \\ \hline \end{array}$	$\begin{array}{r} 408 \\ 25 \\ \hline \end{array}$	$\begin{array}{r} 628 \\ 12 \\ \hline \end{array}$	$\begin{array}{r} 536 \\ 23 \\ \hline \end{array}$

9. Find the quotients:

a	b	c	d	e	f	g
$5 \overline{)448}$	$7 \overline{)829}$	$12 \overline{)176}$	$18 \overline{)208}$	$27 \overline{)310}$	$77 \overline{)908}$	$86 \overline{)692}$

Lesson 29 — TEST YOURSELF

Work Space

1. A cake was cut into 8 equal parts. Jim had eaten 1 piece leaving $\frac{7}{8}$ of the cake on the plate. Mary took 1 piece. How much of the cake was then left on the plate? _____

2. Change to larger units:

a b c d

2000 lb. = ____ T. 12 pk. = ____ bu. 28 qt. = ____ gal. 32 fl. oz. = ____ qt.

3. Change to smaller units:

2 qt. = ____ pt. 4 T. = ____ lb. 4 gal. = ____ qt. 5 lb. = ____ oz.

4. Write the answers:

$\frac{1}{2}$ of 14 = ____ $\frac{1}{3}$ of 24 = ____ $\frac{1}{4}$ of 20 = ____ $\frac{1}{3}$ of 36 = ____

Find the sums:

a	b	c	d	e	f	g
5. 287	420	7484	3087	7005		
840	633	3782	7249	4273	38,073	37,290
29	27	783	1230	2708	42,709	20,239
<u>732</u>	<u>402</u>	<u>2072</u>	<u>5704</u>	<u>350</u>	<u>10,388</u>	<u>24,578</u>

6. $\frac{1}{6}$ $\frac{5}{8}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{4}$ 9 lb. 14 oz. 8 yd. 1 ft.

$\frac{1}{6}$ $\frac{1}{8}$ $\frac{1}{3}$ $\frac{2}{5}$ $\frac{1}{4}$ 8 lb. 1 oz. 2 yd. 1 ft.

7. Find the differences:

$\frac{3}{5}$	$\frac{7}{8}$	$\frac{6}{6}$	$\frac{2}{4}$	84,209	4380	12 gal. 3 qt.
<u>$\frac{2}{5}$</u>	<u>$\frac{4}{8}$</u>	<u>$\frac{5}{6}$</u>	<u>$\frac{1}{4}$</u>	<u>28,379</u>	<u>2477</u>	<u>5 gal. 1 qt.</u>

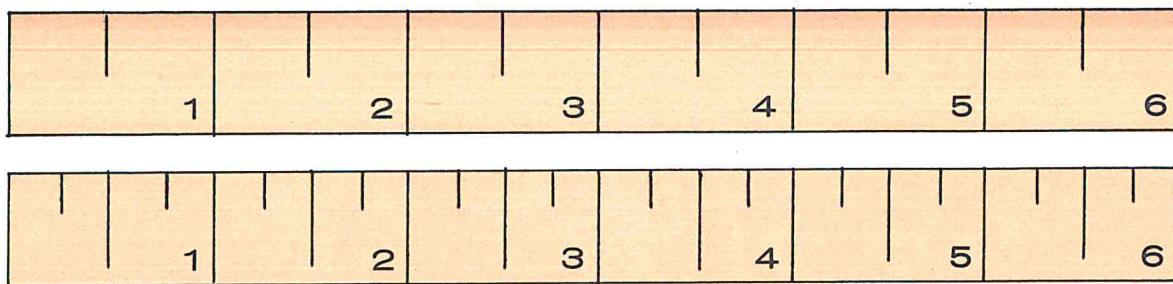
8. Find the products:

a	b	c	d	e	f
6 ft. 3 in.	5 bu. 1 pk.	704	680	429	327
<u>3</u>	<u>2</u>	<u>25</u>	<u>38</u>	<u>62</u>	<u>24</u>

9. Find the quotients:

a	b	c	d	e	f
6 $\overline{)924}$	8 $\overline{)523}$	21 $\overline{)624}$	14 $\overline{)182}$	32 $\overline{)428}$	52 $\overline{)829}$

UNIT 5



Lesson 1 — USING THE RULER

Each of the inch spaces of the ruler may be divided into two equal parts. Each part is called **one-half inch** and is written $\frac{1}{2}$ inch.

Each of the inch spaces of the ruler may also be divided into four equal parts. Each part is then called **one-fourth inch** and is written $\frac{1}{4}$ inch.

- How many $\frac{1}{4}$ inches are there in an inch? ____ Find $\frac{1}{4}$ inch on the ruler.
- How many $\frac{1}{2}$ inches are there in an inch? ____ Find $\frac{1}{2}$ inch on the ruler.
Find $\frac{3}{4}$ inch on the ruler.
- Lay a ruler on line A. Line A is longer than 4 inches. Be sure that the first mark on the left of your ruler is exactly even with the left end of the line. Line A extends to the first $\frac{1}{4}$ -inch mark past the 4-inch mark on the ruler. Its length is written $4\frac{1}{4}$ inches. Line A is ____ inches long.

A

- Lay a ruler on line B. Line B is longer than 3 inches. Line B extends to the first $\frac{1}{2}$ -inch mark past the 3-inch mark on the ruler. Its length is written $3\frac{1}{2}$ inches. Line B is ____ inches long.

B

- Line C is longer than 2 inches. It extends to the $\frac{3}{4}$ -inch mark past the 2-inch mark on the ruler. Its length is ____ inches.

C

With your ruler measure the lengths of the following lines:

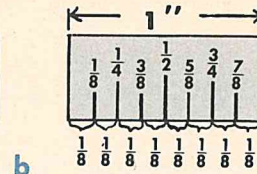
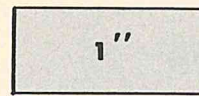
- How long is line D? D ____ in.

- How long is line E? E ____ in.

8. Draw a line 5 inches long:

9. Draw a line $4\frac{3}{4}$ inches long:

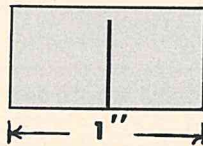
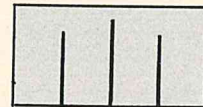
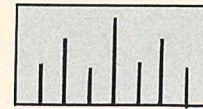
Lesson 2 — USING THE RULER



- $\frac{2}{8}$ inch is the same as ___ inch. $\frac{6}{8}$ inch is the same as ___ inch.
- $\frac{4}{8}$ inch is the same as ___ inch. $\frac{8}{8}$ inch is the same as ___ inch.
- Put an **X** beside the rectangle that shows the inch divided into 8 equal parts: Each of the eight equal parts is called **one-eighth inch**, and is written $\frac{1}{8}$ inch.

Write the answers:

- How many $\frac{1}{8}$ inches are there in one inch? ___
- How many $\frac{1}{4}$ inches are there in one inch? ___
- How many $\frac{1}{2}$ inches are there in one inch? ___
- Which is longer $\frac{1}{8}$ inch, $\frac{1}{4}$ inch, $\frac{1}{2}$ inch? ___
- Which is shorter $\frac{1}{8}$ inch, $\frac{1}{4}$ inch, $\frac{1}{2}$ inch? ___



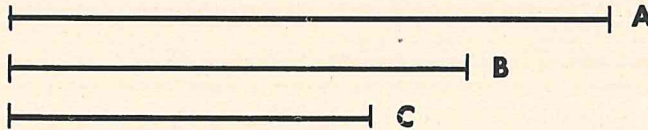
- Measure lines A, B, and C. Line A is $\frac{1}{8}$ inch longer than 3 inches. The length of the line is 3 inches + $\frac{1}{8}$ inch and is written $3\frac{1}{8}$ inches.

Write the length of each line in inches and fractions of inches:

A. _____ inches long.

B. _____ inches long.

C. _____ inches long.



10. Draw a line $3\frac{3}{8}$ inches long:

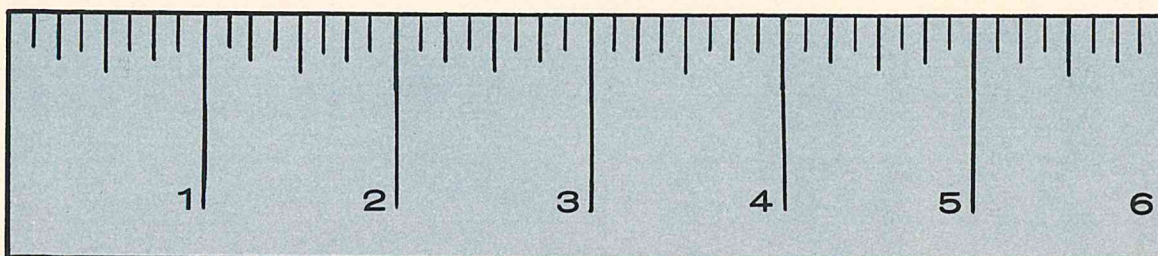
11. Draw a line $2\frac{5}{8}$ inches long:

12. Draw a line $4\frac{1}{8}$ inches long:

13. Draw a line $1\frac{7}{8}$ inches long:

14. Find the following marks on this rule and put an **X** on each mark.

$\frac{1}{8}$ inch, $\frac{3}{8}$ inch, $\frac{5}{8}$ inch, $\frac{7}{8}$ inch, 1 inch, $1\frac{1}{8}$ inches, $1\frac{3}{8}$ inches, $1\frac{5}{8}$ inches,
 $1\frac{7}{8}$ inches, $3\frac{1}{8}$ inches, $4\frac{5}{8}$ inches, $5\frac{7}{8}$ inches.



Lesson 3 — PRACTICE

Write the **numbers** that tell how many:

- | | | |
|---|---|--|
| <p>a</p> <p>1. 2 feet = ____ inches</p> <p>2. 1 yard = ____ inches</p> <p>3. 2 miles = ____ feet</p> | <p>b</p> <p>7 quarts = ____ pints</p> <p>4 pecks = ____ quarts</p> <p>3 bushels = ____ pecks</p> | <p>c</p> <p>3 gallons = ____ quarts</p> <p>2 hours = ____ minutes</p> <p>3 pounds = ____ ounces</p> |
|---|---|--|

Use the symbol **>** or **<** to compare these measures:

- | | | |
|---|---|---|
| <p>4. 2 yards ____ 8 feet</p> <p>5. 2 pints ____ 3 cups</p> <p>6. 1 quart ____ 3 pints</p> <p>7. $\frac{1}{2}$ gallon ____ 1 quart</p> <p>8. $\frac{1}{2}$ bushel ____ 1 peck</p> | <p>$\frac{1}{2}$ yard ____ 20 inches</p> <p>33 hours ____ 2 days</p> <p>1 foot ____ 15 inches</p> <p>2 quarts ____ 6 pints</p> <p>5 pecks ____ 10 quarts</p> | <p>2 gallons ____ 9 quarts</p> <p>3 pounds ____ 50 ounces</p> <p>$1\frac{1}{2}$ ton ____ 500 pounds</p> <p>15 minutes ____ 1 hour</p> <p>18 seconds ____ 2 minutes</p> |
|---|---|---|

Write the **equal** measures:

- | | | |
|---|---|--|
| <p>9. 4 cups = ____ pints</p> <p>10. 2 yards = ____ feet</p> <p>11. 9 feet = ____ yards</p> <p>12. 2 feet = ____ inches</p> <p>13. 2 quarts = ____ cups</p> | <p>5 hours = ____ minutes</p> <p>2 gallons = ____ pints</p> <p>24 cups = ____ quarts</p> <p>4 gallons = ____ quarts</p> <p>4 bushels = ____ pecks</p> | <p>2 pounds = ____ ounces</p> <p>108 inches = ____ yards</p> <p>240 minutes = ____ hours</p> <p>60 seconds = ____ minutes</p> <p>320 quarts = ____ bushels</p> |
|---|---|--|

Write the **abbreviations**:

- | | | | |
|--|--|---|---|
| <p>a</p> <p>14. inch = ____</p> <p>15. pint = ____</p> <p>16. gallon = ____</p> | <p>b</p> <p>foot = ____</p> <p>hour = ____</p> <p>peck = ____</p> | <p>c</p> <p>yard = ____</p> <p>quart = ____</p> <p>bushel = ____</p> | <p>d</p> <p>cup = ____</p> <p>minute = ____</p> <p>second = ____</p> |
|--|--|---|---|

17. Find the **products**:

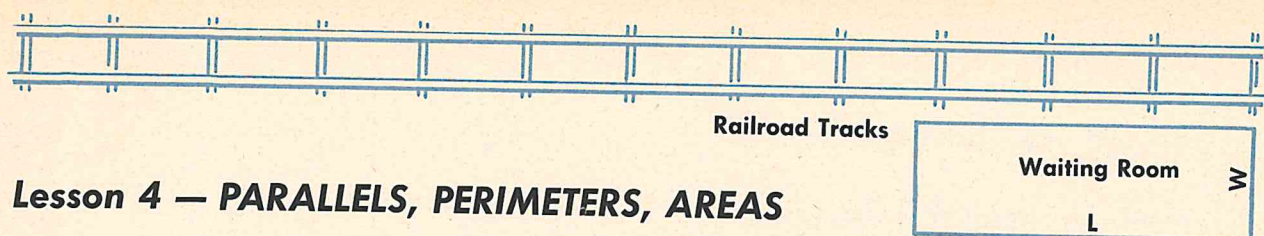
- | | | | |
|--|------------------------------------|-------------------------------------|------------------------------------|
| <p>6 min. 18 seconds</p> <p><u>2</u></p> | <p>3 bu. 1 pk.</p> <p><u>3</u></p> | <p>3 gal. 1 qt.</p> <p><u>3</u></p> | <p>4 lb. 3 oz.</p> <p><u>4</u></p> |
|--|------------------------------------|-------------------------------------|------------------------------------|

18. Find the **sums**:

- | | |
|---|---|
| <p>a</p> <p>3 gal. 1 qt.</p> <p>4 gal. 2 qt.</p> | <p>b</p> <p>3 hr. 25 minutes</p> <p>1 hr. 18 minutes</p> |
|---|---|

19. Find the **differences**:

- | | |
|---|--|
| <p>a</p> <p>7 pt. 2 c.</p> <p>3 pt. 1 c.</p> | <p>b</p> <p>8 lb. 12 oz.</p> <p>2 lb. 8 oz.</p> |
|---|--|



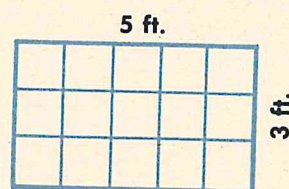
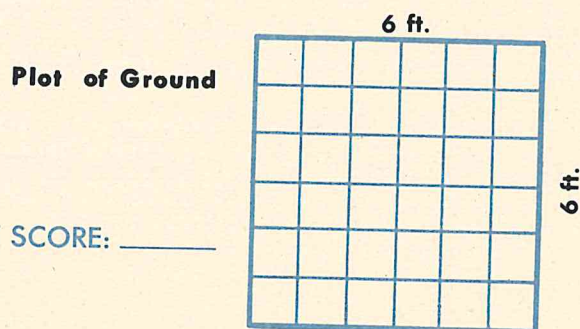
Lesson 4 — PARALLELS, PERIMETERS, AREAS

- The tracks of the train are an equal distance apart and will never meet. The tracks are **parallel**. Name other parallel lines. _____
- The floor of the waiting room is shaped like a rectangle. It has four straight sides and four right angles. Any two sides of a rectangle which come together in a right angle can be called the length and the width. Length and width are never on opposite or parallel sides. The longer side is usually called the **length**, and the shorter side is called the **width**. Look at the picture of the waiting room. What letter is written on the length? _____ On the width? _____
- Robert made a pen for his chickens. How much fencing will Robert need to put around a pen if it is 5 ft. long and 3 ft. wide? The distance around a rectangle is called the **perimeter**. The perimeter of the pen is 3 ft. + 5 ft. + 3 ft. + 5 ft. 2 sides are 3 ft. long or 2×3 ft. 2 sides are 5 ft. long or 2×5 ft. The perimeter is also $(2 \times 3) + (2 \times 5)$ ft. Robert will need _____ ft. of fence.
- Robert fenced a square plot of ground. How much wire did he need to go around the plot of ground? The perimeter is 6 ft. + 6 ft. + 6 ft. + 6 ft. Robert needed _____ ft. of fence.
- How much surface does the pen cover? Surface measure is called **area**. Area is always expressed in square measure, such as square inches or square feet. The picture shows a plan of the pen divided into squares. Each square is 1 ft. long on each side. How many squares are in the top row? _____ In the 2nd row? _____ How many rows are there? _____ How many squares are there all together? _____
The answer is also the number of square feet in the area of the rectangle since each square is 1 square foot.

You can find the number of square ft. in the area a shorter way than by dividing it into squares and counting them.

To find the area of any rectangle, multiply its length by its width.

6. Find the area of Robert's chicken pen:



TOP SCORE: 11 MY SCORE: _____

Chicken Pen 143

Estimate each answer before working the problem to know what a reasonable answer would be. Use the symbols $>$ or $<$ to compare the numbers:

$$\begin{array}{r} \$7.00 \\ 6.00 \\ 5.00 \\ \hline 18.00 \end{array} \begin{array}{c} > \\ > \\ > \\ > \end{array} \begin{array}{r} \$6.95 \\ 5.89 \\ 4.98 \\ \hline 17.82 \end{array}$$

A reasonable estimate is about _____.

Mary paid altogether.

\$6.00	—	\$6.19
3.00	—	3.25
2.00	—	2.10

A reasonable answer is about _____.

Joe spent _____.

400 — 398
300 — 289

A reasonable answer is about _____.

Mike has more stamps than Joe.

\$6.00 — \$5.90
3.00 — 2.78

A reasonable answer is about _____.

Bill had _____ left.

_____ 298
_____ 329
_____ 290

A reasonable answer is about _____.

They drove miles.

A reasonable answer is _____ miles.

Mary's trip was miles longer than Sue's.

Lesson 6 — PROBLEM SOLVING

Estimate each answer before working the problem to know what a reasonable answer would be. Use the symbol greater than $>$ or less than $<$ to compare the numbers:

1. Jim paid \$1.89 for gloves and 5 times as much for a pair of shoes. Find how much he paid for the shoes.

A reasonable answer is about _____.

He paid _____ for the shoes.

Estimate	Problem
\$2.00	\$1.89
5	5
\$10.00	\$9.45

2. Mary bought a coat and a pair of shoes. The coat cost 3 times as much as the shoes. The shoes cost \$6.25. Find what the coat cost.

A reasonable answer is about _____.

She paid _____ for the coat.

Estimate Problem

3. Mike pasted 392 pictures of rockets and planes in a scrapbook. He put 8 pictures on a page. Find how many pages of pictures he had in the scrapbook.

A reasonable answer is _____ pages.

He has _____ pages of pictures.

Estimate Problem

8) 400 8) 392

4. Some fourth-grade pupils attended a program in the auditorium. They filled 4 rows of seats. If there are 18 seats in each row, find how many fourth-grade pupils attended the program.

A reasonable answer is about _____ pupils.

_____ fourth-grade pupils attended the program.

Estimate Problem

5. Seven girls bought a gift that cost \$7.28. If they shared the cost of the gift equally, find what each girl paid.

A reasonable answer is about _____.

Each girl paid _____.

Estimate Problem

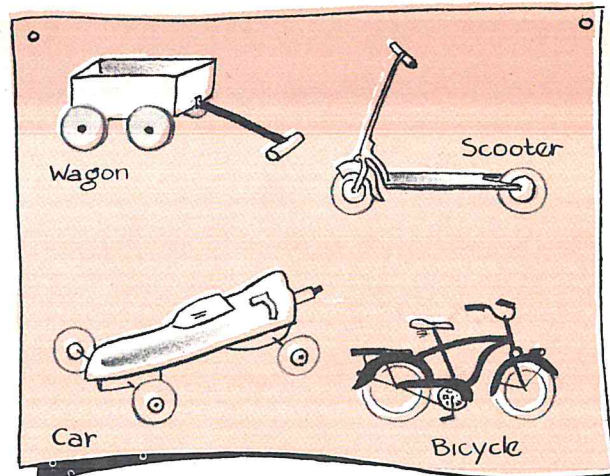
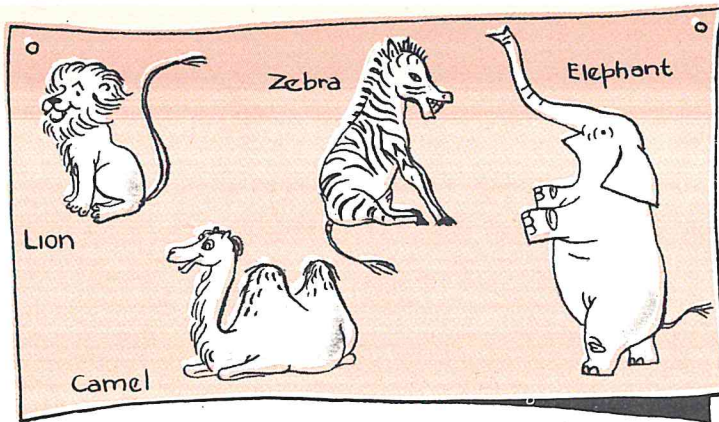
6. Mary's mother paid \$2.95 a yard for curtain material. Find what she paid for 9 yards.

A reasonable answer is about _____.

She paid _____ for the 9 yards.

Estimate Problem

UNIT 6



Lesson 7 — SETS

A collection of things is called a set. Each thing in a set is a member of the set. The first picture is a set of wild animals.

1. Write the names of the members of this set: _____

2. The second picture is a set of toys.

Write the names of the members of this set: _____

You are a member of several sets: your family, your class, your school, and your city. Are you a member of other sets? If there are no members in any group known as a set, this set is called the empty set. An empty set may be written this way: { }

In the following list of sets, write the number of members in each set:

3. Class members who are 5 years old ____ If there are no members 5 years old, the set is empty.

4. Girls in your class ____

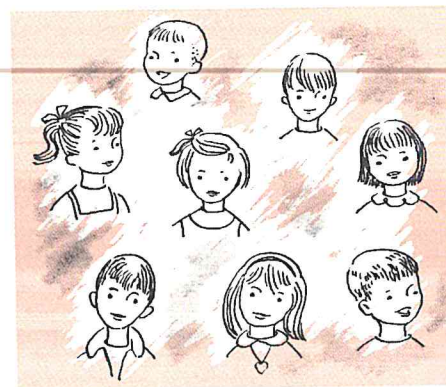
5. Boys in your class ____

6. Class members who are 9 years old ____

7. Class members who are 10 years old ____

8. Class members whose names begin with A ____

9. Class members whose names begin with B ____



10. Beginning with 1, write the members of the set of whole numbers less than 5. _____

11. Write the members of the set of whole numbers greater than 5 and less than 10. _____

12. Write the members of the set of whole numbers greater than 5 and less than 6. _____

Lesson 8 — MORE ABOUT SETS

42, 43, 44, 45, 46 Set C	11, 13, 15, 17 Set D	4, 5, 6, 7, 8 Set A	52, 54, 56, 58 Set B
		XL, XLI, XLII, XLIII, XLIV Set E	

Find the sets that are:

- The even numbers greater than 50 and less than 60. Set _____
- The odd numbers greater than 9 and less than 19. Set _____
- The numbers greater than 41 and less than 47. Set _____
- The numbers greater than 3 and less than 9. Set _____
- Roman numerals corresponding to the numbers 40 to 44. Set _____

The members of a set are enclosed by braces.

Set A is written: $\text{Set A} = \{4, 5, 6, 7, 8\}$

Write Set B, Set C, Set D, and Set E using braces:

a

b

- Set B = _____ Set C = _____
- Set D = _____ Set E = _____

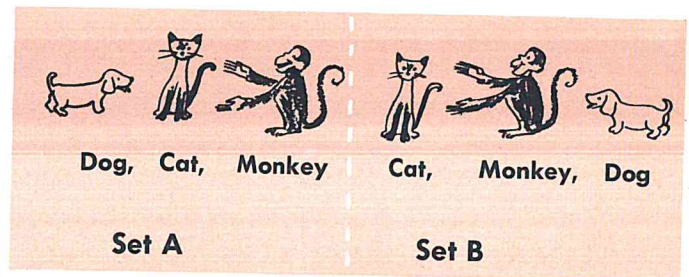
- Set Z has all of the odd numbers greater than 3 and less than 15.
Set Z = _____
- Set X has as its members all of the even numbers that are greater than 2 and less than 10.
Set X = _____
- Set S has all of the numbers greater than 195 and less than 201 as its members.
Set S = _____
- Set T has as its members all of the numbers greater than 14 and less than 19.
Set T = _____
- Set Y has all of the even numbers greater than 6 and less than 18.
Set Y = _____
- Set R has all of the whole numbers greater than 49 and less than 60, as its members.
Set R = _____

UNIT 6

Lesson 9 — MORE ABOUT SETS

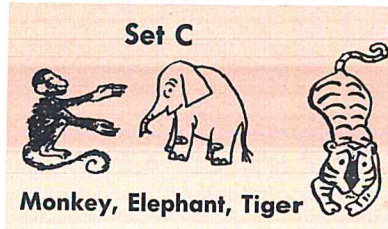
Set A = {Dog, Cat, Monkey}

Set B = {Cat, Monkey, Dog}



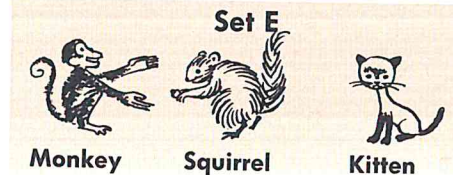
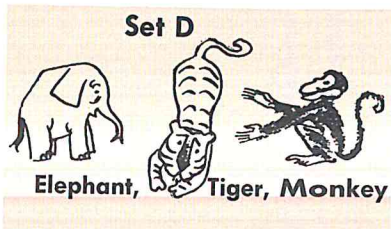
Two sets are equal if the members of the two sets are the same. The members of the two sets do not need to be in the same order. Set A has the same members as Set B. Then Set A = Set B.

1. Write the members of each set:



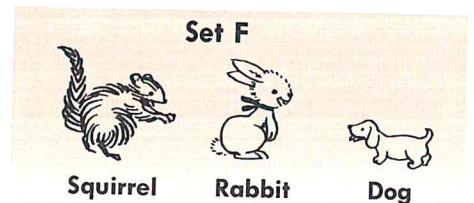
Set C = { _____ }

Set D = { _____ }



Set E = { _____ }

Set F = { _____ }



Set E does not equal set F because all the members of Set E are not the same as all the members of Set F. To show that the sets are not equal, write: **Set E \neq Set F**.

Use the symbol = or the symbol \neq to compare these sets:

Set G = {Bear, Monkey, Elephant}

Set I = {Monkey, Elephant, Bear}

Set H = {Lion, Monkey, Bear}

Set J = {Monkey, Bear, Lion}

6 UNIT

2. Set G Set H

Set G Set I

Set G Set J

3. Set H Set I

Set H Set J

Set J Set I

Compare these sets with = or \neq :

Set K = {1, 2, 3, 4}

Set L = {3, 2, 1, 4}

Set M = {3, 2, 5, 4}

Set N = {4, 5, 2, 3}

4. Set K Set L

Set K Set M

Set K Set N

5. Set L Set M

Set L Set N

Set M Set N

6. What member must be added to Set X to make Set X equal to Set W? Set W = {4, 6, 3, 2} Set X = {4, 2, 6}

7. What member must be removed from Set Y to make it equal to Set Z? Set Y = {10, 20, 30, 40} Set Z = {40, 20, 10}

Lesson 10 — REVIEW

In problems 1 and 2, estimate each answer before working the problem. Use the symbols $<$ or $>$ to compare the estimate with the answer:

1. Jim and Sue made trips to other cities. On these trips they drove 279 miles, 401 miles, and 397 miles. Find how many miles they drove in all.

A reasonable answer is about _____ miles.

They drove _____ miles.

Estimate Problem

2. Mary put candy in sacks for treats. She had 215 pieces of fudge, and she put 5 pieces in each sack. Find how many treats she had.

A reasonable answer is about _____.

She had _____ treats.

Estimate Problem

3. Set R has as its members all of the even whole numbers greater than 217 and less than 225.

Write Set R using braces: Set R = _____

4. Set A = {1, 3, 5, 7} Set B = {5, 7, 3}

What member must be added to make Set B equal Set A? _____

5. A floor of a room of a house is shaped like a rectangle, having two sides of 18 feet and two sides of 12 feet. What is the perimeter? _____

Change to smaller units:

6. 3 feet = _____ inches 5 quarts = _____ pints 3 gallons = _____ quarts

7. 4 pints = _____ cups 4 yards = _____ feet 5 pounds = _____ ounces

8. Draw a line $3\frac{7}{8}$ inches long:

9. Draw a line $4\frac{1}{4}$ inches long:

10. Find the sums:

a
8 yd. 1 ft.
3 yd. 1 ft.

b
8 lb. 8 oz.
4 lb. 2 oz.

c
7 bu. 1 pk.
8 bu. 2 pk.

d
4 gal. 1 qt.
8 gal. 2 qt.

11. Find the products:

8 lb. 2 oz.
6

6 bu. 1 pk.
2

8 ft. 1 in.
9

3 gal. 1 qt.
3

Lesson 11 — TEST YOURSELF

In problems 1 and 2, estimate each answer before working the problem to know what a reasonable answer would be. Use the symbols $<$ or $>$ to compare the numbers:

1. Tom had \$6.95. He spent \$2.82 for a book. Find how much money he had left.

A reasonable estimate is _____. Tom had _____ left.

2. Jim paid \$2.95 for a baseball and 5 times as much for a baseball glove. Find how much he paid for the glove.

A reasonable estimate is _____.

He paid _____ for the glove.

3. Set S has as its members all of the whole numbers less than 5 and greater than 4. Set S = _____

4. What member must be removed from Set C to make it equal to Set D? _____

Set C = {5, 15, 10, 20}

Set D = {10, 20, 5}

Change to larger units:

a

b

c

5. 12 ft. = _____ yd.

24 qt. = _____ pk.

48 in. = _____ ft.

6. 8 pt. = _____ qt.

32 fl. oz. = _____ qt.

16 qt. = _____ gal.

With your ruler measure the lengths of lines A and B:

7. Line A is _____ in. long. **A**

8. Line B is _____ in. long. **B**

9. Find the perimeter of a square 6 feet on a side: _____

Find the area of the square: _____

10. A pie had been cut into 8 equal pieces. There was $\frac{5}{8}$ of it left on a plate. Jim took 2 pieces of pie. How much pie was left on the plate? _____

Work Space

11. Find the differences:

a

b

8 ft. 11 in.
7 ft. 5 in.

7 pt. 3 c.
2 pt. 2 c.

12. Find the products:

a

b

8 yd. 1 ft.
2

6 lb. 2 oz.
7

Lesson 12 — REVIEW — SECOND SEMESTER

Estimate the answer before working the problem to know what a reasonable answer would be. Use the symbols $<$ or $>$ to compare the numbers:

1. Sue paid \$7.95 for a dress, \$6.89 for a pair of shoes, and \$5.98 for a sweater. Find how much Sue paid for them all.

A reasonable estimate is _____.

Sue paid _____ for them all.

2. Some boys and girls made programs for a talent show. They bought 48 sheets of colored paper at 3¢ a sheet and 1 bottle of gold ink at 31¢ a bottle.

(A) How much did the colored paper cost? _____

(B) What was the total cost? _____

3. Write these numbers as Roman numerals:

87 _____ 12 _____ 35 _____ 47 _____ 94 _____ 77 _____

4. Jane began to practice her music lesson at 4:30. She finished at 5:25. How long did Jane practice?

Work Space

Estimate Problem

Work Space

A

B

5. Find the averages:

a
133
528
275

b
38
40
75
82

6. Add:

a
3743
6059
1203

b
28593
60752
35073

c
 $2\frac{2}{5}$
 $1\frac{1}{5}$
 $1\frac{1}{5}$

d
 $3\frac{3}{8}$
 $2\frac{2}{8}$
 $1\frac{1}{8}$

Watch the signs:

a
7. 8 ft. 2 in.
×5

b
7 lb. 5 oz.
+ 12 lb. 10 oz.

c
87528
- 35709

d
12 yd. 2 ft.
- 3 yd. 1 ft.

e
603
×28

f
 $3\frac{3}{4}$
- 1\frac{1}{4}

a
8. 6 $\overline{)583}$

b
5 $\overline{)993}$

c
18 $\overline{)547}$

d
39 $\overline{)682}$

e
85 $\overline{)987}$

f
67 $\overline{)582}$

UNIT 6

Lesson 13 — REVIEW OF BOOK

In problems 1-3, estimate each answer before working the problem to know what a reasonable answer would be. Use the symbols $>$ and $<$ to compare the estimate with the answer:

1. Estimate Problem

The fourth graders filled 8 rows of seats in the auditorium. If there are 18 seats in each row, how many fourth graders were in the auditorium? A reasonable answer is about _____.

_____ fourth graders in the auditorium.

2.

When Bob and Kay were on their vacation, they traveled 398 miles the first day, 429 miles the second day, and 290 miles the third day. How many miles did they travel during the three days? A reasonable answer is about _____ miles.

Bob and Kay traveled _____ miles.

3.

$3 \overline{)3.00}$ $3 \overline{)2.85}$

Sue paid \$2.85 for 3 yards of cloth for a skirt. What did she pay for one yard? A reasonable answer is about _____.

She paid _____ for one yard of cloth.

4. On the number line show that 3 and 6 are factors of 18. Then find two other factors of 18:

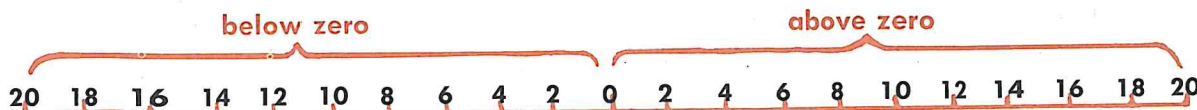


5. The other factors of 18 are _____ and _____.

6 UNIT

Find the differences between these temperatures. Use the number line to check your work:

6. 15 above zero and 20 above _____ 17 above zero and 2 below _____

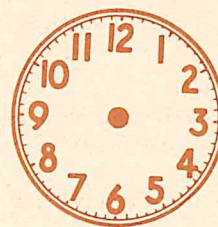
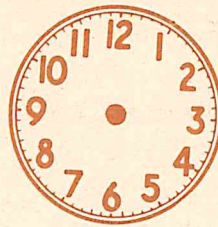


Find the products:

a	b	c	d	e	f	g	h
7. $\begin{array}{r} 408 \\ 7 \end{array}$	$\begin{array}{r} 320 \\ 9 \end{array}$	$\begin{array}{r} 803 \\ 25 \end{array}$	$\begin{array}{r} 330 \\ 58 \end{array}$	$\begin{array}{r} 209 \\ 80 \end{array}$	$\begin{array}{r} 642 \\ 10 \end{array}$	$\begin{array}{r} 320 \\ 44 \end{array}$	$\begin{array}{r} 329 \\ 86 \end{array}$

Lesson 14 — REVIEW OF BOOK

1. School begins at 9 A.M. and lunch is at 11:30 A.M. Draw hands on the clockfaces to show these two times. How long does school last in the morning? _____



Write the equal measures:

- | a | b | c | d |
|----------------------|--------------------|-------------------|---------------------|
| 2. 3 lb. = ____ oz. | 4 yd. = ____ ft. | 10 pt. = ____ c. | 8 bu. = ____ pk. |
| 3. 2 gal. = ____ qt. | 12 pt. = ____ qt. | 32 oz. = ____ lb. | 6 ft. = ____ in. |
| 4. 8 pk. = ____ bu. | 2000 lb. = ____ T. | 15 ft. = ____ yd. | 5280 ft. = ____ mi. |

Compare these sets
with = or \neq :

Set A = {2, 4, 6, 8}

Set B = {1, 3, 5, 7}

Set C = {5, 3, 1, 7}

Set D = {4, 2, 8, 6}

- | a | b | c |
|---------------------|------------------|------------------|
| 5. Set A ____ Set B | Set A ____ Set C | Set A ____ Set D |
| 6. Set B ____ Set C | Set B ____ Set D | Set C ____ Set D |

7. Find the products:

- | a | b | c | d |
|------------------|----------------------|--------------------|--------------------|
| 6 lb. 2 oz.
7 | 8 qt. 3 fl. oz.
8 | 12 ft. 1 in.
11 | 8 mi. 125 ft.
9 |

8. Find the sums:

- | | | | |
|----------------------------|-------------------------------|------------------------------|------------------------------|
| 3 lb. 4 oz.
5 lb. 6 oz. | 4 T. 327 lb.
12 T. 927 lb. | 5 gal. 1 qt.
8 gal. 2 qt. | 12 ft. 8 in.
18 ft. 2 in. |
|----------------------------|-------------------------------|------------------------------|------------------------------|

UNIT 6

9. Find the differences:

- | | | | |
|----------------------------|--------------------------------------|----------------------------|----------------------------|
| 8 yd. 2 ft.
5 yd. 1 ft. | 6 qt. 15 fl. oz.
3 qt. 10 fl. oz. | 8 pk. 7 qt.
2 pk. 5 qt. | 8 bu. 3 pk.
5 bu. 2 pk. |
|----------------------------|--------------------------------------|----------------------------|----------------------------|

10. Add:

- | a | b | c | d | e |
|-----------------------------|-----------------------------|---|---|---|
| $\frac{6}{8} + \frac{1}{8}$ | $\frac{2}{5} + \frac{2}{5}$ | $\frac{1}{6} + \frac{1}{6} + \frac{3}{6}$ | $\frac{1}{8} + \frac{1}{8} + \frac{2}{8}$ | $\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ |

11. Subtract:

- | a | b | c | d | e |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| $\frac{2}{3} - \frac{1}{3}$ | $\frac{7}{8} - \frac{3}{8}$ | $\frac{4}{5} - \frac{1}{5}$ | $\frac{6}{6} - \frac{1}{6}$ | $\frac{2}{2} - \frac{1}{2}$ |

TOP SCORE: 43 MY SCORE: _____

FINAL TEST PRACTICE — I

Work Space

1. Jerry had 80¢. He spent 30¢ for a sandwich and 25¢ for a soda. How much did he spend? _____

How much did he have left? _____

2. Bob needs 12 more books to complete a set of mystery books. If each book costs \$.89, how much will the 12 books cost? _____

3. Write the fractions that tell how much of each circle is colored. Add the fractions. Shade the answer circle to show the sum:



4. Mrs. Jones made 3 dozen cookies. How many cookies are in 3 dozen? _____

5. Joanne spent \$2.25 for 3 books. If each book cost the same amount of money, what did each book cost? _____

6. Alice's test scores were 88, 95, and 93. Find her average test score. _____

7. The temperature outdoors was 90 degrees. It was 72 degrees in the schoolroom. What was the difference? _____

Work Space

8. Place commas in these numbers and write them as they should be read:
- a. 2396481 _____ million _____ thousand _____
- b. 4715283 _____ million _____ thousand _____

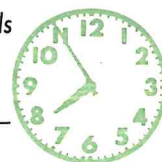
9. Set A has all of the odd numbers greater than 1 and less than 9 as its members. Set A = _____

Underline the correct answer:

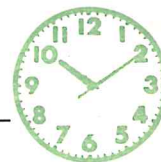
10. How much cloth will Jane need for a dress? 2 yards 2 feet 2 inches

11. Jerry's height is about: 4 inches 4 feet 4 yards

A



B



12. What time does each clockface show? _____

13. Write A.M. or P.M. on each line:

a. 9 o'clock in the morning _____

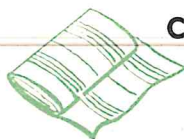
b. 5 o'clock in the afternoon _____

14. Draw a line under the things bought by the gallon:

15. Put an X on the things bought by the pound:



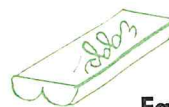
Butter



Cloth



Gasoline



Eggs



Candy



Milk

Practice II — FINAL TEST

Write the answers:

b

1. $\frac{1}{2}$ of 8 = $\frac{1}{4}$ of 56 =

2. $\frac{1}{3}$ of 21 = $\frac{1}{5}$ of 63 =

3. Draw a line under the largest number:

8294 8942 9824 9428

4. Draw a ring around each 6. Then draw a line from each 6 to the word that tells its value in its number:

6 4 2, 9 8 7	tens
2 7 3, 0 6 9	ones
9 7 6, 4 3 2	hundreds
2 4 5, 6 0 5	thousands
3 7 9, 5 8 6	ten thousands
8 6 0, 0 3 1	hundred thousands

5. Round these numbers to the nearest ten:

83 45 77 54

6. Write the missing numbers:

$7 + 9 = 10 + \underline{\quad}$ $5 + 6 = 10 + \underline{\quad}$

7. Use the symbol = or \neq to compare these problems:

$8 \times 3 \underline{\quad} 4 \times 6$ $7 \times 7 \underline{\quad} 8 \times 6$

8. Find the differences:

65095	\$9.75	4702
<u>59538</u>	<u>1.38</u>	<u>2899</u>

9. Find the products:

\$.75	326	89
<u>49</u>	<u>9</u>	<u>90</u>

Write the missing numbers:

10. $8 \times \underline{\quad} = 72$ $12 - \underline{\quad} = 7$

11. $42 \div \underline{\quad} = 6$ $6 + \underline{\quad} = 14$

12. Draw a line under the Roman numeral that represents the largest number:

XXIX XXV XXX XXVIII

13. Draw lines from each picture to its name:

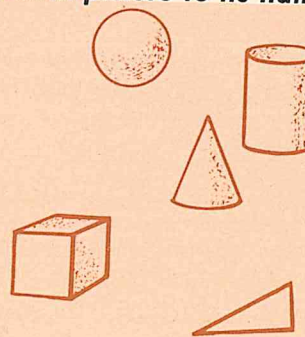
cube

cone

cylinder

sphere

triangle



14. Round these numbers to the nearest hundred:

425 585 769 742

Use the symbol > or < to compare these numbers:

15. 4698 4689 5784 5748

16. 6300 6299 2475 2457

17. Find the sums:

\$6.95	27,540	3892
<u>2.40</u>	<u>38,072</u>	<u>4705</u>
<u>2.65</u>	<u>69,321</u>	<u>6039</u>
		<u>5900</u>

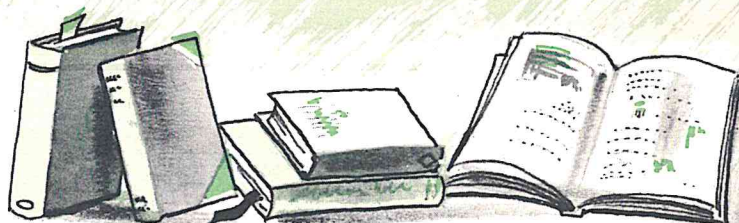
18. Find the quotients:

$25 \overline{) 493}$	$38 \overline{) 291}$
-----------------------	-----------------------

UNIT 6

TOP SCORE: 39 MY SCORE:

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ART



SCIENCE



THE ADDITION FACTS

$\frac{1}{1}$ 2	$\frac{2}{1}$ 3	$\frac{3}{1}$ 4	$\frac{4}{1}$ 5	$\frac{5}{1}$ 6	$\frac{6}{1}$ 7	$\frac{7}{1}$ 8	$\frac{8}{1}$ 9	$\frac{9}{1}$ 10
$\frac{1}{2}$ 3	$\frac{2}{2}$ 4	$\frac{3}{2}$ 5	$\frac{4}{2}$ 6	$\frac{5}{2}$ 7	$\frac{6}{2}$ 8	$\frac{7}{2}$ 9	$\frac{8}{2}$ 10	$\frac{9}{2}$ 11
$\frac{1}{3}$ 4	$\frac{2}{3}$ 5	$\frac{3}{3}$ 6	$\frac{4}{3}$ 7	$\frac{5}{3}$ 8	$\frac{6}{3}$ 9	$\frac{7}{3}$ 10	$\frac{8}{3}$ 11	$\frac{9}{3}$ 12
$\frac{1}{4}$ 5	$\frac{2}{4}$ 6	$\frac{3}{4}$ 7	$\frac{4}{4}$ 8	$\frac{5}{4}$ 9	$\frac{6}{4}$ 10	$\frac{7}{4}$ 11	$\frac{8}{4}$ 12	$\frac{9}{4}$ 13
$\frac{1}{5}$ 6	$\frac{2}{5}$ 7	$\frac{3}{5}$ 8	$\frac{4}{5}$ 9	$\frac{5}{5}$ 10	$\frac{6}{5}$ 11	$\frac{7}{5}$ 12	$\frac{8}{5}$ 13	$\frac{9}{5}$ 14
$\frac{1}{6}$ 7	$\frac{2}{6}$ 8	$\frac{3}{6}$ 9	$\frac{4}{6}$ 10	$\frac{5}{6}$ 11	$\frac{6}{6}$ 12	$\frac{7}{6}$ 13	$\frac{8}{6}$ 14	$\frac{9}{6}$ 15
$\frac{1}{7}$ 8	$\frac{2}{7}$ 9	$\frac{3}{7}$ 10	$\frac{4}{7}$ 11	$\frac{5}{7}$ 12	$\frac{6}{7}$ 13	$\frac{7}{7}$ 14	$\frac{8}{7}$ 15	$\frac{9}{7}$ 16
$\frac{1}{8}$ 9	$\frac{2}{8}$ 10	$\frac{3}{8}$ 11	$\frac{4}{8}$ 12	$\frac{5}{8}$ 13	$\frac{6}{8}$ 14	$\frac{7}{8}$ 15	$\frac{8}{8}$ 16	$\frac{9}{8}$ 17
$\frac{1}{9}$ 10	$\frac{2}{9}$ 11	$\frac{3}{9}$ 12	$\frac{4}{9}$ 13	$\frac{5}{9}$ 14	$\frac{6}{9}$ 15	$\frac{7}{9}$ 16	$\frac{8}{9}$ 17	$\frac{9}{9}$ 18

THE SUBTRACTION FACTS

$\frac{2}{1}$	$\frac{3}{1}$	$\frac{4}{1}$	$\frac{5}{1}$	$\frac{6}{1}$	$\frac{7}{1}$	$\frac{8}{1}$	$\frac{9}{1}$	$\frac{10}{1}$
$\frac{3}{2}$	$\frac{4}{2}$	$\frac{5}{2}$	$\frac{6}{2}$	$\frac{7}{2}$	$\frac{8}{2}$	$\frac{9}{2}$	$\frac{10}{2}$	$\frac{11}{2}$
$\frac{4}{3}$	$\frac{5}{3}$	$\frac{6}{3}$	$\frac{7}{3}$	$\frac{8}{3}$	$\frac{9}{3}$	$\frac{10}{3}$	$\frac{11}{3}$	$\frac{12}{3}$
$\frac{5}{4}$	$\frac{6}{4}$	$\frac{7}{4}$	$\frac{8}{4}$	$\frac{9}{4}$	$\frac{10}{4}$	$\frac{11}{4}$	$\frac{12}{4}$	$\frac{13}{4}$
$\frac{6}{5}$	$\frac{7}{5}$	$\frac{8}{5}$	$\frac{9}{5}$	$\frac{10}{5}$	$\frac{11}{5}$	$\frac{12}{5}$	$\frac{13}{5}$	$\frac{14}{5}$
$\frac{7}{6}$	$\frac{8}{6}$	$\frac{9}{6}$	$\frac{10}{6}$	$\frac{11}{6}$	$\frac{12}{6}$	$\frac{13}{6}$	$\frac{14}{6}$	$\frac{15}{6}$
$\frac{8}{7}$	$\frac{9}{7}$	$\frac{10}{7}$	$\frac{11}{7}$	$\frac{12}{7}$	$\frac{13}{7}$	$\frac{14}{7}$	$\frac{15}{7}$	$\frac{16}{7}$
$\frac{9}{8}$	$\frac{10}{8}$	$\frac{11}{8}$	$\frac{12}{8}$	$\frac{13}{8}$	$\frac{14}{8}$	$\frac{15}{8}$	$\frac{16}{8}$	$\frac{17}{8}$
$\frac{10}{9}$	$\frac{11}{9}$	$\frac{12}{9}$	$\frac{13}{9}$	$\frac{14}{9}$	$\frac{15}{9}$	$\frac{16}{9}$	$\frac{17}{9}$	$\frac{18}{9}$

MULTIPLICATION FACTS

$\frac{1}{1}$	$\frac{2}{2}$	$\frac{3}{3}$	$\frac{4}{4}$	$\frac{5}{5}$	$\frac{6}{6}$	$\frac{7}{7}$	$\frac{8}{8}$	$\frac{9}{9}$
$\frac{1}{2}$	$\frac{2}{4}$	$\frac{3}{6}$	$\frac{4}{8}$	$\frac{5}{10}$	$\frac{6}{12}$	$\frac{7}{14}$	$\frac{8}{16}$	$\frac{9}{18}$
$\frac{1}{3}$	$\frac{2}{6}$	$\frac{3}{9}$	$\frac{4}{12}$	$\frac{5}{15}$	$\frac{6}{18}$	$\frac{7}{21}$	$\frac{8}{24}$	$\frac{9}{27}$
$\frac{1}{4}$	$\frac{2}{8}$	$\frac{3}{12}$	$\frac{4}{16}$	$\frac{5}{20}$	$\frac{6}{24}$	$\frac{7}{28}$	$\frac{8}{32}$	$\frac{9}{36}$
$\frac{1}{5}$	$\frac{2}{10}$	$\frac{3}{15}$	$\frac{4}{20}$	$\frac{5}{25}$	$\frac{6}{30}$	$\frac{7}{35}$	$\frac{8}{40}$	$\frac{9}{45}$
$\frac{1}{6}$	$\frac{2}{12}$	$\frac{3}{18}$	$\frac{4}{24}$	$\frac{5}{30}$	$\frac{6}{36}$	$\frac{7}{42}$	$\frac{8}{48}$	$\frac{9}{54}$
$\frac{1}{7}$	$\frac{2}{14}$	$\frac{3}{21}$	$\frac{4}{28}$	$\frac{5}{35}$	$\frac{6}{42}$	$\frac{7}{49}$	$\frac{8}{56}$	$\frac{9}{63}$
$\frac{1}{8}$	$\frac{2}{16}$	$\frac{3}{24}$	$\frac{4}{32}$	$\frac{5}{40}$	$\frac{6}{48}$	$\frac{7}{56}$	$\frac{8}{64}$	$\frac{9}{72}$
$\frac{1}{9}$	$\frac{2}{18}$	$\frac{3}{27}$	$\frac{4}{36}$	$\frac{5}{45}$	$\frac{6}{54}$	$\frac{7}{63}$	$\frac{8}{72}$	$\frac{9}{81}$

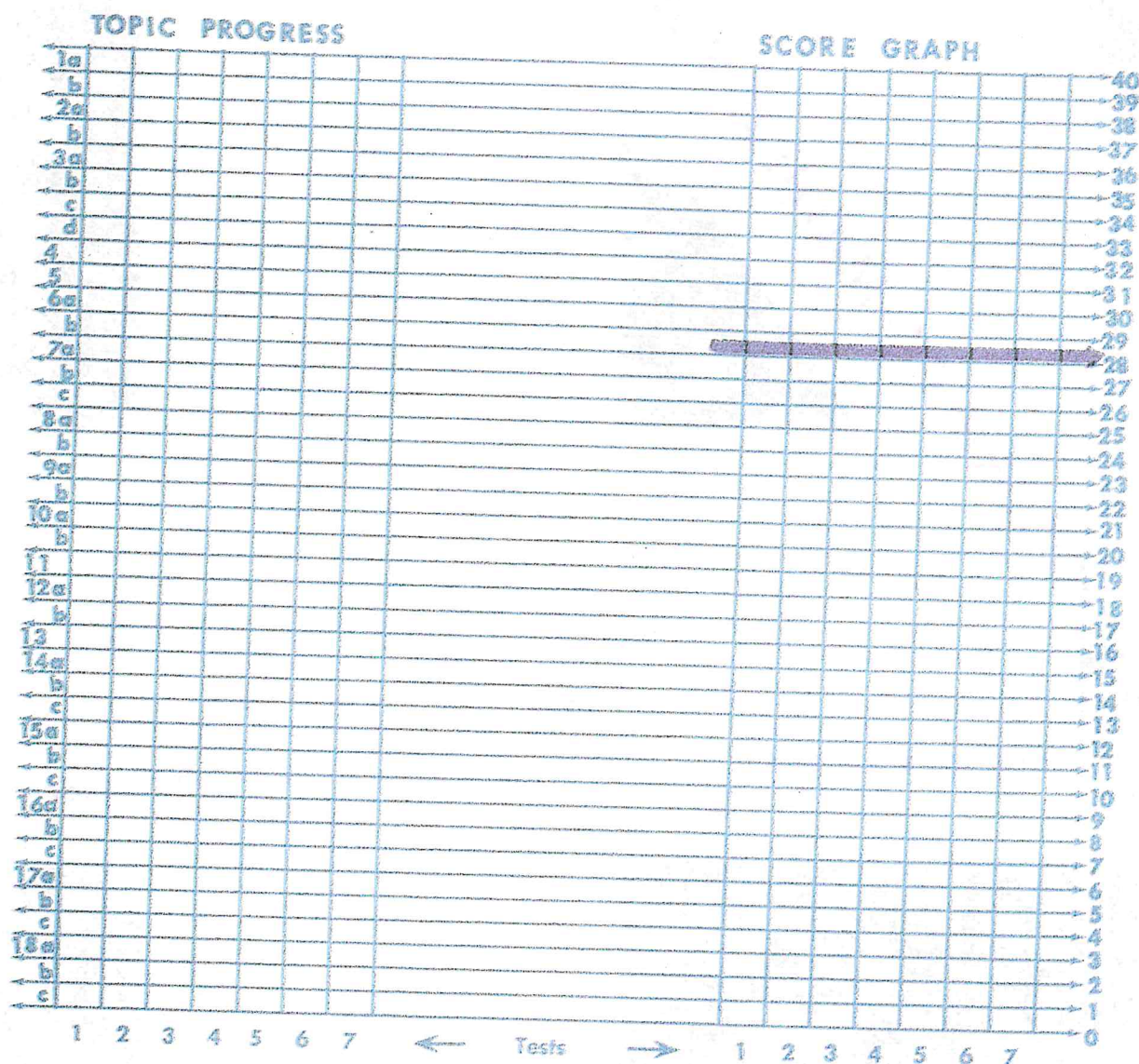
DIVISION FACTS

$1 \overline{)1}$	$1 \overline{)2}$	$1 \overline{)3}$	$1 \overline{)4}$	$1 \overline{)5}$	$1 \overline{)6}$	$1 \overline{)7}$	$1 \overline{)8}$	$1 \overline{)9}$
$2 \overline{)2}$	$2 \overline{)4}$	$2 \overline{)6}$	$2 \overline{)8}$	$2 \overline{)10}$	$2 \overline{)12}$	$2 \overline{)14}$	$2 \overline{)16}$	$2 \overline{)18}$
$3 \overline{)3}$	$3 \overline{)6}$	$3 \overline{)9}$	$3 \overline{)12}$	$3 \overline{)15}$	$3 \overline{)18}$	$3 \overline{)21}$	$3 \overline{)24}$	$3 \overline{)27}$
$4 \overline{)4}$	$4 \overline{)8}$	$4 \overline{)12}$	$4 \overline{)16}$	$4 \overline{)20}$	$4 \overline{)24}$	$4 \overline{)28}$	$4 \overline{)32}$	$4 \overline{)36}$
$5 \overline{)5}$	$5 \overline{)10}$	$5 \overline{)15}$	$5 \overline{)20}$	$5 \overline{)25}$	$5 \overline{)30}$	$5 \overline{)35}$	$5 \overline{)40}$	$5 \overline{)45}$
$6 \overline{)6}$	$6 \overline{)12}$	$6 \overline{)18}$	$6 \overline{)24}$	$6 \overline{)30}$	$6 \overline{)36}$	$6 \overline{)42}$	$6 \overline{)48}$	$6 \overline{)54}$
$7 \overline{)7}$	$7 \overline{)14}$	$7 \overline{)21}$	$7 \overline{)28}$	$7 \overline{)35}$	$7 \overline{)42}$	$7 \overline{)49}$	$7 \overline{)56}$	$7 \overline{)63}$
$8 \overline{)8}$	$8 \overline{)16}$	$8 \overline{)24}$	$8 \overline{)32}$	$8 \overline{)40}$	$8 \overline{)48}$	$8 \overline{)56}$	$8 \overline{)64}$	$8 \overline{)72}$
$9 \overline{)9}$	$9 \overline{)18}$	$9 \overline{)27}$	$9 \overline{)36}$	$9 \overline{)45}$	$9 \overline{)54}$	$9 \overline{)63}$	$9 \overline{)72}$	$9 \overline{)81}$

PROGRESS CHART

In a separate test book there are six achievement tests, seven tests on fundamentals, a semester test, two final tests, and six pages of drills. Comparison of the scores you make on the Tests on Fundamentals will show your improvement. You can then use the drill pages to strengthen your weak spots. The two Score Charts below are to be used with the Tests on Fundamentals.

1. The chart on the left shows progress in each topic. Problems on the same topic have the same number in each Test on Fundamentals. You may put an X in the square opposite the number of each problem you miss. If X's appear often opposite the same number, you can see plainly that you need more drill on the topic that has that number.
2. You may make a bar graph of your scores on the chart at the right. The numbers down the side refer to the score points. You may want to draw a red line across at 28 where the grey line is on the chart, as a danger signal. Try to keep your scores above this danger line.



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